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## Lightroom Overview

Lightroom is a database management tool and a file processor. This means it can manage your images for you allowing more efficient filing and retrieval of images as well as defining the parameters to use to process raw or jpg files for export either into an editor like Photoshop or a final file for printing or sharing. By defining parameters I mean that Lightroom writes data to a file that tells the processor what to do to that file on export. It does not directly modify the file - it creates instructions on how to modify the file. That is the database part, along with remembering where files are located.

Think of Lightroom as a library card catalog. The card catalog does not contain the books; it contains references to where the books can be found. Lightroom references where your files can be found on a hard drive. The Lightroom catalog is metadata; information about other data, which are your image files. Initially, the information is location of the file, resolution, color space, copyright, keywords, etc. As you process an image, more data is written to the catalog as instructions on how to process your image. I suggest you also set preferences to export settings to an XMP sidecar file. This copies the processing, ratings and other information to a file that accompanies the raw file in your hard drive and gives you an additional measure of backup, and the ability to open the file with modifications intact in Bridge or ACR.

If you modify a file outside of Lightroom, such as in ACR, the XMP file for that file will contain the changes, but Lightroom will <u>not</u> automatically update the database to reflect those changes. An icon will appear in LR (up arrow with lines at top right) indicating that the XMP file has changed. Click on the icon and you will be asked whether to import the modifications from the XMP file or not.

Lightroom consists of several modules, each allowing for different intentions for your files:

**The Library Module** allows you to import, sort, find, and view your files in several ways. It happens to include a very basic adjustment tool, but image control is better done in the Develop module.

**The Develop module** is a rich tool for application of adjustments to your files, including raw image captures. Modifications to your file are not applied to the original image file but are stored as instructions on how to modify the file when it is exported to another program or to a final form. It shows you on the screen how these modification will affect your file, but your original file is kept in its original form. This is what Adobe refers to as non-destructive editing.

**The Slideshow Module** allows you to make an on screen presentation from selected files, or a collection of files.

**The Map Module** will read GPS data if it is included in your file and displays the point on a map where the image was made.

**The Book module** allows you to design a layout of your images for printing from various book publishers.

**The Print module** provides instructions for your printer so you can print your images. While this sounds rather simplistic, the Print module is one of Lightroom's most complex and valuable tools. Printing from Lightroom is the best means of getting high quality results from your images.

**The Web module** lets you compile your images into "galleries" which you can display on your website and share with others. It is a good way for professional photographers to send proofs to clients, or for anyone to share the equivalent of a slideshow with others through the web.

Lightroom is therefore a "first step" in preparing files. Many consider it a substitute or replacement for the Adobe Bridge, which is a file viewer without the database management capabilities of Lightroom, and Adobe Camera Raw, which is a separate raw file processor. It is not, however, a total replacement for Photoshop or Elements which allow more precise, in-depth, local control over images. It is not a pixel editor. Lightroom has a specific tool for exporting images to Photoshop or other image processors you may choose for refinement of your images.

Images can be imported from your hard drive or directly from a memory card. I do not recommend importing images by plugging the camera into the computer. You should use a card reader.

At the bottom left of the Library interface is the Import button. Click on this to open the source dialog on the left. Here you choose your source such as a card reader or a folder on your hard drive. The images in the source will appear in the thumbnails section in the center of the screen. Check or uncheck your desired images.

From a card reader you should choose Copy as the images have to be imported into your hard drive. From a folder in the computer choose Add. <u>There are no images in Lightroom</u>, only references to images that are somewhere else in your system. That can be your primary hard drive or an external hard drive.  Deleting a Lightroom catalog will not remove your images, but will remove the metadata stored about processing your images.

**Keywording** images can make finding them later an easier task. Keywords should be generic rather than "descriptive" to allow for better searching. Keywords can be added during import or later in the Library module. Adding keywords to groups of files rather than individually is a more productive approach.

**Histogram**

A graphical representation of the values in the image file. There are 256 levels from 0 (black) on the left to 255 (white) on the right. How high the bar goes is an indication of the amount of information for a particular value.

Under the histogram are metadata readouts indicating the ISO, lens focal length, aperture and shutter speed for the image. When the mouse is over the image these change to indicate specific RGB values in the image at the position of the cursor. The readout can be in RGB values in percentages or in L*a*b values. The L channel values can be useful for determining best values for the highlights and shadows. RGB values are in percentages rather than the typical 0-255 as no output color space is imposed in Lightroom. This is one of the fw differences between Lightroom and ACR. ACR respects the propsed

output color space in it readouts.

An indication is also there for the image as an original photo or original + a smart preview of that image.

Putting the cursor into the Histogram allows you to modify the values by dragging within the Histogram. There are 5 areas corresponding to Blacks, Shadows, Exposure, Highlights and Whites.

**Tool Bar**

Under the histogram is the tool bar with the Crop tool, Spot removal tool, Redeye removal tool, Graduated Filter, Radial filter, and the Adjustment brush.

The Aspect (Crop Frame) tool lets you establish the image crop and by default is locked into the aspect ratio of the original capture. Clicking on the drop down lets you choose different aspect ratios including a custom ratio. Clicking on the lock icon unlocks the adherence to an aspect ratio allowing for free form cropping without regard to an established aspect ratio. The Crop tool includes the Straighten tool which can be used to set a horizontal or vertical alignment. There is also a free form rotation bar. Setting an alignment will crop the image within the bounds of the image. The Constrain to Image checkbox forces any crop to live within the bounds of the original.

The Spot Removal tool operates in either Clone or Heal mode. Clone mode will copy an area of the image into the area you select. This is an automatic selection which you can modify by dragging the source to another area of the image. Similarly the Heal mode automatically chooses an area to use to heal and you can modify the selection. The Brush size, Feather (blurring), and Opacity sliders allow you to control the results.

The Red eye tool has two selections, Red eye for the effect of a flash on people's eyes, and Pet eye which does the same thing except that pet's eyes are often a color other than red.

The Graduated Filter is a much more complex tool which allows you to introduce a variety of modifications to the image which are applied in diminishing intensities from a starting point to an end point. Modifications can be made after the area is chosen and can be used to introduce vignettes, and other modifications to exposure, density, contrast, color and other values in the image. The default New changes to Edit to allow you to make changes and the Brush option allows you to modify the Graduation to modify a specific area. The Brush can be a difficult tool to get used to.

The Radial Filter is similar to the Graduated Filter but creates a circular or ellipsoidal correction area on the fly. Modifications are also similar to the Graduated Filter but there is no Brush option.

The Adjustment Brush is the third tool of its kind and allows the same modifications as the Graduated Filter and the Radial Filter, but in a more free form manner. The O key allows you see a mask overlay of the affected area and <Shift> O cycles through red, green, and white mask overlays. A and B brushes are simply two options for brush sizes, feathering and flow. Auto Mask attempts to restrain changes to areas similar to where you start, using edges as benchmarks.

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**Basic Panel**

The Basics panel includes the White Balance tool and presets and a Black and White treatment option. This is the primary image adjustment area affecting everything from exposure and contrast to white and black points, and Presence, which includes Clarity (mid tone contrast), Dehaze, Vibrance and Saturation.

Profile defaults to Adobe Color. However, exploring camera defaults which were reverse engineered by Adobe can create other alternatives to the appearance of the image. Also, a custom camera Calibration can appear in the options if made which will likely be the most accurate rendering of colors and contrast.

Clarity increases midtone contrast rather than overall contrast and uses edge detection in a manner similar to unsharp masking. It can enhance detail and add punch to an image.

Dehaze is an algorithm derived from deconvolution software that helps to minimize haze by analyzing areas of low contrast against possible edges. It increases contrast by lowering darker values with less effect on raising higher values which distinguishes it from the Contrast slider and the Clarity slider.

Vibrance and Saturation both add color contrast for additional impact. The difference is that Vibrance analyzes the image and applies more saturation to values with less color contrast. The Saturation slider is more generic and overall in its application of color contrast.

**Tone Curve**

Tone Curve adjustments modify RGB or individual channels values. This is a good place to learn how curves work.

Default is Linear which basically allows the default image modifications already made to exist without other modifications to contrast or density. A Medium contrast and Strong contrast option applies additional adjustments to the file and shows where those were made. Parametric changes can be made using the sliders and modify specific areas of the curve. The areas are quarter tones by default but can be altered by dragging the percentage point slider arrows at the bottom.

Point curve or parametric adjustments can be made by choosing the icon at the lower right corner. A Targeted adjustment tool can also be activated at the top left so that adjustments can be made by simply putting the cursor at the location in the image where you want to make a change.

**HSL / Color / B&W**

Hue (color), Saturation, and Lightness values of each of 8 color ranges can be individually adjusted in the HSL section. The Color section essentially duplicated this in a different manner. The Black and White option applies a default modification to the file interpreting the tones in B&W. Each of the 8 color ranges can be lightened or darkened to change the default interpretation of the image. A Targeted adjustment tool is also available to allow you to place the cursor on the image and LR will choose the range to interpret, which may include more than one value.

**Detail**

The Detail panel includes a small 100% preview box as adjustments to capture sharpening should be done at 100%. Sharpening is similar to Unsharp Masking in Photoshop using an Amount, and a Radius (how far from an edge). Holding down the Alt or Option key turns the display to grayscale to more accurately show the effects as the Sharpening is done to the Luminance channel of the file only, not to color values. The sharpening is designed to recover and enhance the image softness inherent in demosaicing the capture into a recognizable image which tends to not readily define sharp edges. Anti-aliasing of digital images to avoid stair stepping from square pixels means edge transitions are not as clearly defined as we might want them to be. It is not intended to critically or creatively sharpen the image, which should be done either in Photoshop and/or in the Printing or output stage.

With amount set at the default 25 and a radius of 1 pixel the detail panel effectively overcomes basic capture softness in most images. However, some images can use stronger settings and there are two other controls. The detail setting uses two different methods of determining sharpening. At the left edge the setting says zero, but is really a measure of how fine the resolution is set. At zero the setting is broad which tends to be useful for portraits by reducing the tendency to sharpen fine detail like pores in skin. As you raise the detail slider the resolution is refined until the 100 setting is working with much finer edge detection. The result is visually greater fine detail you might want in a textured subject, a building, or other high frequency subject matter. With the <alt>[option] key down the image turns gray and you can see the change in refinement, but it is very subtle, similar to the effect of a high pass filter.

Masking is also more easily seen with the <alt>[option] key down and appears like a mask. On-the-fly-masking is done by edge detection and can help you keep sharpening off of smoother areas and more confined to edges. White areas will be sharpened, and black areas protected. Settings are best determined by subject matter.

Noise reduction needs to be applied only as needed when noise appears as a result of the camera capture. The amount should be minimal as noise reduction by default softens an image.  Detail will help overcome any excessive smoothing from the noise reduction.  Color noise reduction can be used if the image shows obvious noise in colors, usually in dark tones and as a result of increased exposure to underexposed images.

**Lens Corrections**

Under the Profile tab both Remove Chromatic Aberration and Enable Profile Corrections should be turned on. These eliminate lens induced issues including barrel and pincushion distortion problems. They minimize the need for manual corrections. Open an image with all other setting at their default; check the boxes, and in the Develop | Set Default Settings click on the box to update to the current settings. This will now apply the corrections with each image you open. Under the Manual tab adjustments are commonly made to reduce vignette reduction is the image is used without any cropping. Otherwise this is done elsewhere.

**Transform**

The Transform panel allows perspective corrections to be applied either automatically or manually to reduce or eliminate the keystone effect. This can be an issue if the camera is not aligned with the subject planes. It is especially useful in architectural photography, but often to reduce minimal alignment issues in other images. There are some boxes which will apply automatic corrections, but carefully examine the results to be sure they are what you want. Changes depend on subject detail and can be interesting if not disappointing in some circumstances. Manual controls and the Guided Upright tool in the upper left corner can help you with difficult or critical corrections.

**Effects**

The Effects panel has three areas. The top is Post-Crop vignetting which applies a darkening or lightening around the image area formed by the crop. This is useful in holding the eye in the frame and giving some visual weight to the image which is desirable. Setting the vignette is best done by reducing the amount to -100 in order to be able to visually set the midpoint, roundness and feathering. Highlights controls the ability to allow highlight values to punch through the vignette.

The Grain section applied grain to the image to either simulate film grain or as an effect.

**Camera Calibration**

Process should be listed as current, but imported images from earlier processes will respect the process under which they were created. Updating the the current process version is recommended, but not necessary.

Shadows and Color Primaries are intended to be used custom modifications of color rendering by the camera. However, some creative color grading can be done here. Experimentation will reveal whether or not they are useful to you.

**Importing Images**

Importing images is done with the Import dialog accessible from the Library module. The source drives will be listed at the left, and destination options on the right. In most cases the Add option is the best choice. Remember that you are adding images to the database, not changing the location of the source images on the drive. Adding images simply references the images so that Lightroom can manage the files.

Other options include Copy as DNG, Copy, and Move. Copy as DNG adds the images to the database and converts the raw file to the Adobe DNG format. Copy allows you to copy images to a new location at the same time as you are adding them to the database. Move deletes the images from the source location after moving them and adding to the catalog.

The DNG format introduces slight non-destructive compression to the raw file. Changes to a DNG image are recorded as modifications to the metadata rather than to an external XMP file. The primary intention of DNG is to preserve the viability of a raw image in the event that the original proprietary file cannot be accessed. There is no harm in using the DNG format, but I fail to see the advantages. As metadata is rewritten the possibility exists that the original file will be corrupted in the process. This is a minor point.

When importing images it is possible to add the images to a collection and to add keywords to the images. These are organizational aids and what you do depends on your intentions. Keywords can be added to all imported photos at once. More specific keywording can be done to subsets from the library.

**Catalogs**

Most people only need one catalog. This is not an issue of the number of images, it is simply one of organization. If you need more than one catalog for separating images such as business vs personal images that is fine. There are no advantages or disadvantages to multiple catalogs. The catalog resides in the Pictures | Lightroom folder and in the Backups  folder. The location can be seen in the Catalog Settings dialog under the General tab.

Backup catalogs are created each time you close Lightroom. You should visit the Backup folder on occasion and delete older backups. I suggest keeping two or three copies. They are not deleted except by you manually

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