

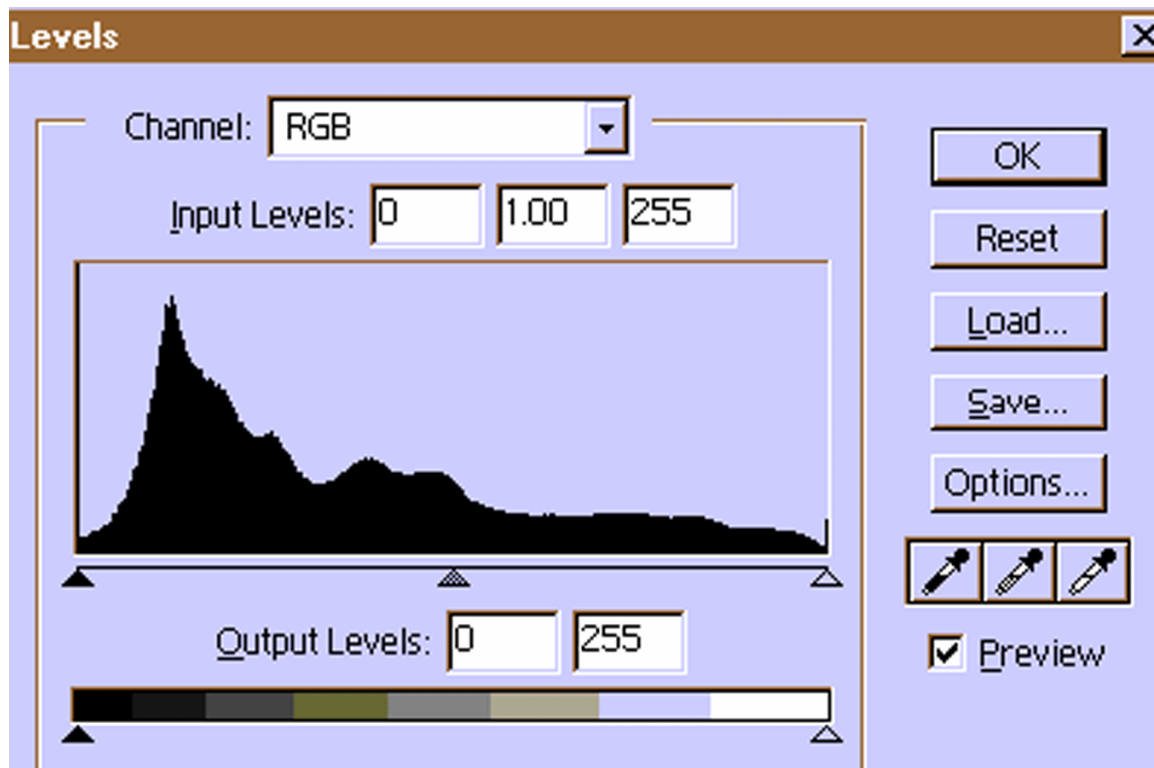
BIPC DIGITAL IMAGING STUDY GROUP
ASSIGNMENT 2002-05
SUBJECT: USE OF THE LEVELS TOOL

PROBLEM: A digital image that you have on the computer needs color correction. You will use the Levels tool to provide initial color correction of the whole image, either directly in 16 bit/color image or on an adjustment layer if you are in 8 bit/color image. How to get the most out of the nonlinear Levels tool?

CONCEPT: Open the Levels tool in Photoshop (Cntrl-L). The window that you get on your screen looks like the screen shot below (Cancel/Reset share the one button – Alt changes from Cancel to Reset) (Cancel/Auto share the one button – Alt changes from Auto to Options(for Auto))

Levels is a tool which provides the following general three applications for use on color images:

- As an image evaluation tool, using the histograms and clipping display
- When we have a color image that has no problems with color balance but needs some lightening (or much more rarely, darkening) in the midtones. Often, a move with the gamma slider is all that's needed
- As an image targeting tool. If the image doesn't contain specular highlights that we want to blow out to white, we use the black and white Output sliders to limit the minimum highlight and maximum shadow dots. If there are specular highlights, we use the eyedropper technique instead



Input Levels (Input is clip) (Result is stretch with holes):

- When you move the black slider from its default position at zero to a higher level, you're telling Photoshop to turn all the pixels at that level and lower to level 0 (black), and stretch all the levels to the right of the slider to fill the entire tonal range from 0 to 255. (Shadow detail may be clipped, but contrast and detail in the shadows are increased.
- When you move the white slider it does the same thing as the black slider, but at the other end of the tonal range.
- When you move the gamma slider you alter the midtones without altering the shadows and highlights. When you move the slider you are telling Photoshop where you want the midtone gray to be. If you move it to the left, the image gets lighter because you're choosing a value that darker than 128 and making it 128. As you do so the shadows get squeezed together. The opposite happens when you move the slider to the right. Attempt to limit gamma adjustment to moves smaller than .7 to 1.4.

Output Levels (Output is slip) (Result is compress with overlaps):

- The output levels control lets you compress tonal range into fewer than 256 gray levels.
- As you increase the value of the black slider, it limits the darkest pixels in the image to the level at which it is set (a new black is picked) and remaps all other pixels in reference to the new black. For example if you move the slider from 0 to 5, then pixels that were at level 1 go to level 5, etc. Pixels that were at 10 go to almost 15.

PROCEDURE: Set white point and black point levels as follows:

Double click on the White Point Eyedropper and set C5Y3M3K0

Double click on the Black Point Eyedropper and set R10G10B10

Setting tonal value

- If there are highlights, find and ID highlights via threshold (Alt – drag), Reset, Cntrl-Shift. Use F8 to show Info Palette. Use white point eyedropper on the highlight point. Do same for black point if there is a dark portion of the image in which you want to see detail
- Alternative is to shift Input Black Slider and Input White Slider
- Gray Slider (Gamma setting, midtones setting). Also Grey Point Eyedropper for special cases

Color Sampler (Info Palette)

Channels

Auto (a no-no)

Preview Toggle

Load and Save

Remember: Click OK after all corrections have been made, not incrementally. This minimizes image information degradation!

ASSIGNMENT: Choose an image that has good detail in the shadows and highlights and perform the above steps. Then chose an image that has just midtones and perform the above steps. Print a before and an after versions and be prepared to discuss.

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