Lab Assignment-2(b)

Octave/MATLAB / Python / Open CV / R

%PROBLEM-1%

Take an image and perform contrast stretching in that using the function: Where a and b are minimum and maximum intensity values of the given image, c and d are minimum and maximum intensity values of the targeted image.

$$s = (r - c)\left(\frac{b - a}{d - c}\right) + a$$

%PROBLEM-2%

Create histogram of the image before contrast stretching and after contrast stretching.

%PROBLEM-3%

Capture an image from webcam / mobile phone in dim light and enhance the image using histogram equalization.

%PROBLEM-4%

Take the same captured image and perform contrast stretching and also compare it with the generated image after scaling the image by a factor of say three.

%PROBLEM-5%

Take an image let's say "coin.jpg", select ROI of any random size and convert pixels values within it in 8-bit binary format.

%PROBLEM-6%

Display the image for LSB and MSB and plot histogram for these images.

%PROBLEM-7%

Split the image in bit planes and then combine bit plane ab times. Compare histogram for these images using bin to bin and cross bin comparison method.

%PROBLEM-8%

Take a low contrast image of yourself using webcam & perform following point processing operations.

(a) Log-transform
(b) Inverse log transform
(c) Square
(d) Square root
(e) Negatives

%PROBLEM-9%

Perform a transform on an original picture with c = 1 & $gamma$ = 0.2. Now perform the reverse transformation on the same picture, with c = 1 & gamma = 1/.2. Compare the histogram of both images.