EE-608:DIGITAL IMAGE PROCESSING

Lab Assignment 2

(Warning : Don't use chatgpt)

AIM:

1) For the given images, Write a code to find brightness, contrast(histogram), range, aspect ratio, (Hue, saturation, value from RGB image), standard deviation, skewness. (Don't use inbuilt functions for these basics). Understand and compare results.
2) For a given image, apply two smoothing filters (average and gaussian), edge filter(sobel filter in both directions), laplacian filter. Understand math behind them, Apply above kernels on the given image by using convolution. (Don't use inbuilt functions).
   Padding or no padding up to you.
3) Create three images of size(256,256) which are red, blue, green which is a combination of (0,0,255). Now write a function which takes weights (a,b,c) as tuple and inputs are your primary color numbers and plot them.

Doubts: You can approach us during lab time.

Libraries: Opencv to read or write image

Matplotlib to display image

Numpy wherever necessary

Basic python functions

Deliverables:

Just give a concise report of what you understand in your own words, not too heavy theory taken from the web.

1) Write a python or matlab code to implement above given tasks.
2) Analyze the tasks clearly and the mathematics behind the task.

3) Plot the results and make a report of results and observations.