

DA 514 Python Programming Laboratory

Practice Assignment 7 and 8

Date: September 26, 2025

Instruction:

Don't use any built-in functions except for those that are necessary. Avoid using extra information and unnecessary variables.

Task.

Write a Python class *process_image_channel* with following specifications:

- Class methods:
 - `Process_channel`: this method takes an image and a channel number as arguments and returns an image with only the specified channel values.

Write another class *process_image* that will inherit the class *process_image_channel*, with additional functionalities as specified:

- Instance methods:
 - `Process_first_channel`: this method will take an image as an argument and call function `Process_channel` with the channel argument to get the required image and display.
Similarly one instance method for each channels in the image.
 - `maintain_log`: this method will receive a string as an argument and open a text file named *log_file* that maintains the logs for the processing. The string received is appended to this log file. This function will be called at entry and exit points of every instances method (except `maintain_log`) of this class.

Use this class *process_image* to display all channels in the provided image. After this processing, read the log file and print its contents.