Digital Image and Video Processing Lab

Experiment No 2

Write python modular functions to perform the following task. All functions must support 24-bit RGB, 8-bit grayscale and 8- bit color indexed image formats.

Q1. Read .bmp Image:
   a) *Input*: Filename of input image
   b) *Output*: BMP header structure printing height, width, bit width, file size in bytes, and offset size, image pixel array loaded onto memory.
Note: If the input image is not a .bmp, then it should print an error message.

Q2. Write .bmp Image:
   a) *Input*: Filename of output image, BMP header structure, and Image pixel array (read using previous function).
   b) *Output*: Write the loaded pixel array into the disk as an image in .bmp file format.

Q3. Color Channel Manipulation:
   a) *Input*: Read the file 'corn.bmp', 'pepper.bmp' using your previous ReadBMP function.
   b) *Output*: Set each channel of the 'corn.bmp' to zero at an instance (e.g., set the 'R' channel to zero and without changing the intensity values of other channels, repeat it for 'G' and 'B' channel) and save the .bmp file with modified pixel data using WriteBMP function.

Submit a zip file and name it "Exp-02-<Roll No>. The file should contain python code source file (.py format), Read Me File, Report in PDF Format, Input Images, Output Images.