Image & Video Processing

IIVP630C

LAB ASSIGNMENT 2

1. Implement the JPEG compression algorithm through matlab:
    a. Levelized the input image for 2D-DCT.
    b. Transform the levelized matrix based on 2D-DCT.
    c. Use Q50, Q70 and Q30 matrix to generate the quantized matrix.
    d. Save the matrix with the name of 'quantized_QX.jpg', where X=50/70/30.
    e. Implement zigzag scanning to convert the quantized matrix into a bit stream. (Do not use any predefined function)
    f. Implement RLE; print the string and its corresponding size.

NOTE: You can use any grayscale image from the 512x512 dataset.

2. Implement the HWT compression algorithm through matlab:
    a. Generate the 2 level transformed matrix using HWT.
    b. Perform the thresholding for three different values i.e. 15, 20 and 25.
    c. Regenerate the image from the corresponding matrix and save it as "image_name_X.jpg" where X= 15/20/25.

NOTE: You can use any grayscale image from the 512x512 dataset.