Digital Image Processing
(ECE513)

Computer Project 5: Data Compression and Encoding

The goal of this computer assignment is to apply different encoding methods covered in Lectures 26 and 27 to the transformed images in Computer Assignment 2.

1. **Encoding for DCT Transformed Images:** Apply a suitable encoding method to each DCT transformed image block. Provide the performance plot of the SNR of the reconstructed (from encoded data) image as a function of bit per pixel (bpp) for two block sizes tried before.
2. **Encoding for DWT Transformed Images:** Devise a suitable encoding scheme for each thresholded added detail in the 2-D DWT decomposition. Assuming that the lowest order approximation image requires 8 bpp, provide the performance plot of the SNR of the reconstructed image as a function of bpp.
3. Compare the performance plots of the DWT with those of the DCT for the cases studied and comment on their performance.
4. Provide a detailed discussion on the effectiveness of these encoding methods for image data compression in a report. **Please read the guidelines for preparing your report.**