

Abstract

Compression process is a process that reduces the size of the data to generate a digital representation of a solid but could still represent the quantity of information that contained in the data. JPEG and JPEG2000 compression is an example of the techniques that have been standardized which JPEG2000 is the development of JPEG. Compression techniques used in JPEG2000 is a wavelet transformation method. However, wavelets have the disadvantage of low performance at low correlated image. To correct these deficiencies, the final project will be used wavelet transform-SVD (Singular Valu Decomposition) in color image compression. SVD will be used in the area of low correlation and wavelet used in the area of highly correlated image. In the quantization stage Welch Powell algorithm applied to image clustering components in the frequency domain. In phase encoding applied huffman coding algorithm. In previous studies it was found that graph coloring algorithm gives better results than the commonly used vector quantization. The test results showed that the system produces good performance based on the compression ratio and PSNR. Average compression ratio produced is between 50-60%, while the average PSNR resulting in between 50-80 dB. With the methods used in this study, the test results show that the performance of JPEG2000 is better in terms of compression ratio and PSNR.

Keyword : Huffman coding, JPEG2000, SVD, Wavelet, Welch Powell