

ABSTRACT

Image compression is the application of data compression that is performed against the digital image with the purpose to reduce the redundancy of the data contained in the image so that it can be stored or transmitted efficiently.

The Discrete Cosine Transform (DCT) is a technique to transform a signal into frequency components. Discrete Cosine Transform of the image represents a summation of the magnitude and frequency of sinusoids is fickle. The nature of information is changing the DCT image significantly concentrated only on some of the DCT coefficients. Discrete Wavelet Transform (DWT) is one of the methods used in digital image processing. DWT can be used for the transformation of images and image compression. In addition to image processing (image), the method can also be applied to the DWT field of steganography.

In this paper, analysis has been done between the Discrete Cosine Transform algorithm and Discrete Wavelet Transform for contrast. On the image compression there is a standard of measurement error (error) compression: MSE (Mean Square Error), the sigma of the error between the result image compression and image of the original. Peak Signal to Noise Ratio (PSNR), namely to calculate the peak error. The value of low MSE will be better, while high PSNR values will be better. Referring to MSE and PSNR, the performance of the DCT method is better than the DWT method. By using DCT, the results of MSE 0.08342 and PSNR 59.1182 whereas with DWT the results of MSE 1.8758 and PSNR 54.389. The best compression result using DCT is in figure 'street.jpg' with 1024x1024 resolution, because compression ratio reach 81,02%. The best compression result using DWT is in figure 'street.jpg' image with 1024x1024 resolution, because compression ratio reach 91,05%.

Keywords : Compression, Redudancy, DCT, DWT, Coefficients