Abstract

In today's information technology data transmission is often used. The size of data becomes obstacles in the process of data transmission. Data with larger size will take longer transfer time than the data that has a smaller size.

There is a new method in terms of data compression of digital images called Five Modulus Method (FMM). Said to be a five modulus because the basic idea is to use the model as a way of quantizing the colors to the modulus 5, where will be grouped based on score. Based on testing, the average PSNR score using FMM is better than the standard JPEG. Average PSNR score given by FMM is 45.17, while the average JPEG's PSNR score is 42.95. However, the compression ratio given by FMM is smaller than JPEG's.

To increase the compression ratio of the FMM, the encoding rules are modified to use the optimal bit (Improved FMM) and merging process is applied also to the transformation of N-modulus. The first step is to perform quantization using rules of modulus 5, followed by transformation using the N-modulus. In the present study N values are 2, 3, 4 and 5. The test results showed that compression ratio is increasing where some test images have better compression ratio than the JPEG standard. But overall JPEG compression is still better for a digital image compression.

Keywords: *digital image compression, Five Modulus Method (FMM)*