Abstract

In this technology era, the using of digital image has developed rapidly. But, in the other hand, the size of digital image which is more and more bigger cause some problems which related to storage and transmitting. It needs large capacity of memory and bandwidth to store and transmit the digital image. One of the solutions is doing the digital image compression.

Adaptive *Huffman* is one of lossless coding method where this method define mapping from source message to codeword which based on estimation probability of source message. Code is adaptive, changed according to optimal estimation at the time. Then this method is implemented as entropy coding from JPEG image compression.

Then it is proved that Adaptive *Huffman* coding can be uses as an alternative of entropy coding in JPEG compression. Factor which affect compression ratio and time is data range result of Quantization. Whereas the PSNR value is affected by DCT and Quantization.

Image compression ratio which is resulted by this system depend on data range resulted by Quantization. If data range and amount of data is too big, then the length of fixed code resulted by Adaptive *Huffman* coding will be more long and the amount of codeword will be more large so the compression ratio will be low and the compression time will be more long. Otherwise, if data range and the amount of data is small, then the length of fixed code will be more short and the amount of codeword resulted will be more small so the compression ratio resulted will be high and the compression time will be short. Generally, compression ratio from the file resulted by the system is a little better compared to JPEG Compression Standard method.