

Abstract

Nowadays, the using of digital image has developed rapidly. But, in the other hand, there are any problem that appear because of the using the digital image; like 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.

Graf is used to represent the object and the relation between them. The first step of image compression is divided the input image into some blocks and changed it's domain into frequency domain. The theory of graph coloring is used in this system to cluster image data in the frequency domain. This clustering is to find the minimum entropy that not ruin the important information contained in the image.

Then, it can be proof that the theory of graph coloring can be used as the alternative to quantity process for the compression image. The factors that can influence the result of compression are the input image and the threshold value; the size of block is just influence the PSNR value. The compression ratio resulted in this system is depend from the input image. If the input image has many zero value in the histogram, so the compression ratio will be better. Usually the PNSR value that resulted from this system will be higher than the JPEG compression.

Keyword : bandwith, cluster, JPEG, memory, threshold, PSNR