Abstract

Trough developing in technology sector, so many people need to save their data in storage media. More data, written, image, voice, and video data, need to be saved is not appropriate to the limited capacity of storage. That is why there is an idea to make less size of the image.

Recentl many software have been used to compress the image. For example JPEG2000-compressor which resulting the high ratio with good quality image. JPEG2000 which uses wavelet transformation can solve the blocking artifacts problem in JPEG. This final project process the image using wavelet and then through adaptive vector quantization.

Using biorthogonal CDF 9/7 for wavelet transformation. Image through symmetric extension to eliminate boundary effect in convolution process. The benefit is decompretion image will be better even for the boundary. After transformation prosess, image is quantized with adaptive vector quantization. The benefit of the adaptive one is the ability to update codebook. By updating codebook, the gain probability of quality image higher than vector quantization without update codebook.

The compression ratio of the system is 90% on average with good enough picture quality with uncare noise. The PSNR value is between 20-34 dB which means it close to the compression standard value such 30dB.

***Keywords**: vector quantization, adaptive, history, locality, wavelet, biorthogonal*