

## ABSTRACT

The important of information which implied in the medical image causes the treatment of medical image (*x-ray image*) can not eliminate or decrease the information which contained in it (*lossless compression*). It causes the size of image becomes bigger, so that complicate on sending and depository of image. The difficult of sending and limitation of storage media of data becomes the main consideration that need be developed the image compression method which results high compression ratio with good quality of image output.

In this final project has developed an image compression application which use LBG (*Linde Buzo Gray*) algorithm where compatible with image data that has tiny of color configuration, but has resolution as high as medical image. This algorithm is used in quantization step, meanwhile kinds of quantization which uses on this system is vector quantization followed by Huffman coding.

Digital image compression has done to several image testing (*medical image*) with gray color (*RGB color*) 256 x 256 pixel with 24 bit deep. Kind of filter that used to implement Wavelet transformation is filter of *Daubechies2*, *Daubechies3*, *Daubechies4*, *Daubechies12*, *Daubechies18*, and *Daubechies24*, where will be compared from the image quality resulted from each filter that used. Where, from the research's result shows that this method can compress the capacity until 88%, and the quality of the image resulted from the reconstruction (resolution) is more similar or even has the same quality with the real image, can be differed visually by the eyes.

**Keywords** : *Digital Image Compression, Wavelet Transform, LBG Algorithm, Vector Quantization, Medical Image, Huffman Coding*