ABSTRACT

JPEG is a lossy compression algorithm. JPEG works by converting images into mapping the spatial and represent frekuency. Algoritma JPEG is now functioning properly and used in all software technologies and hardware support to information technology including digital video and photo cameras. But part of the JPEG image compression algorithm still can be optimized in the process of transformation, quantization, and coding.

In this thesis, is more focused on developing algorithms DCT transformation and merging this kuantisasi.Penelitian propose a mathematical model that can unify the DCT process and quantisasi (time compression) and process dequantisasi and inverse DCT (during reconstruction). Merging these two processes, hereinafter referred to as the quantized DCT. Experiments were performed using 60 images that have different characteristics by using Matlab programming language.

The results of the final project in the form of a system that is able to show a comparison between the results of compression algorithms with standard DCT-quantized DCT. Based on the test results obtained for the measurements or the results of the quality parameters for DCT PSNR 30.49 dB and a standard for QDCT is 33.875 dB. However, to speed processing time test results show that the standard DCT algorithm is faster than the algorithm QDCT.

Keywords: image, JPEG, DCT, compression, quantization