

## Abstract

In this era of information, information exchange is necessary in real time and because of the exchange of information it cause performance data transmission constraints. That problem is caused by the size of data that are exchanged. Here appears idea how to make data smaller in size, one of the ways is to do it with compression technique in data compression, such as image compression are compression standards that have been used throughout the world namely JPEG and JPEG2000.

In this final task writer analyzed and implement digital image compression using Integer Wavelet Transform (IWT) , Singular Value Decomposition (SVD) as transformation method and using arithmetic coding as entropy coding. The result from the system that has been built compare with the result of image compression standardization JPEG2000 that also using wavelet method and arithmetic coding that match with the system which the writer made.

Compression ratio and PSNR (Peak Signal to Noise Ratio) value is used in performance system calculation technique. With the merger of IWT-SVD, vector quantization and arithmetic coding generated some calculation data system performance. The biggest PSNR value generated by the system is 34.8 dB with compression ratio in the value of 93 percent. This value is obtained by the others parameter support that is codebook for vector quantization with the width in the value of 512 and the threshold for comparison of transformation which used (IWT or SVD) in the amount of 45.

**Keyword:** JPEG, JPEG2000, integer wavelet transform, singular value decomposition, arithmetic coding.