

## **Abstract**

*In certain case an image, such medical image and landscape image, cannot lose information after compression. The image after decompression must have the same quality with the original one. To retain the information which is contained in digital image, lossless compression technique is a solution. Huffman and Shannon-Fano algorithms are the examples of lossless compression techniques.*

*This final project compares Huffman algorithm and Shannon-Fano algorithm, and the type of compression between per plane with per pixel. Both algorithms use statistical approach, where compression has to be done by calculating gray level every pixel. Also, both algorithms create a binary tree to get the code every symbol. Huffman algorithm creates a binary tree with bottom-up approach and Shannon-Fano algorithm creates a binary tree with top-down approach.*

*Based on test result eight test images, Huffman algorithm is better than Shannon-Fano algorithm based on compression ratio performance and decompression time. While for compression type, plane type is better than pixel type based on compression ratio performance, decompression and compression time.*

**Keywords:** *compression, lossless, huffman, shannon-fano, per plane, per pixel.*