

ABSTRACT

The absence of modules and learning how to compress the data on Signal Processing and Multimedia makes it difficult for students to understand the material well. Learning module is a data compression module on MATLAB simulation-based teaching for students, where data compression is introduced in detail and fundamental to facilitate the understanding of each method of data compression techniques. Therefore made simulations using MATLAB.

In this study discussed the compression of text data to be input manually using lossless data compression techniques. Data compression using three methods: Run-Length-Encoding, Shannon-Fano and Huffman-Coding parameters measured include: the file size, time compression, and compression ratio. Data compression is also fitted parameter comparison charts as well as the steps of compressing data at each method.

The results of this study indicate that each method has different characteristics. Run-Length-Encoding has the advantage of data compression on the amount of data that is repeated in a row has a file size of 94.8byte compression, the compression ratio of 31.03% and a time compression of 0.0106sekon. Huffman Coding compression has the advantage of no data on how much data is repeated successively has a file size and compression ratio of 143.725byte and 46.41%. The test results by comparing data compression GUI and the manual calculation of the results obtained is 100% accurate.

Keywords: data compression, Run-Length-Encoding, Huffman-Coding, Shannon-Fano.