PERBANDINGAN KINERJA PREKOMPRESI FREQUENCY SHIFTER, BURROWS-WHEELER TRANSFORM DAN MOVE-TO-FRONT PADA KOMPRESI LOCATION BASED ENCODING (LBE)

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ABSTRAK

Kemajuan bidang teknologi sebagai media informasi semakin umum digunakan. Salah satu media informasi yang sering digunakan adalah data teks. Tetapi ada masalah yang sering dijumpai, yaitu kebutuhan akan tempat besar sebagai media penyimpanannya. Untuk memperkecil ukuran data teks tersebut diperlukan kompresi. Agar hasil kompresi lebih baik, digunakan koder sebagai prekompresi.

Pada Tugas Akhir ini, dibuat suatu perangkat lunak untuk membandingkan kinerja tiga algoritma prekompresi, yaitu Frequency Shifter, Burrows-Wheeler Transform dan Move-to-Front pada satu algoritma kompresi, yaitu kompresi Location Based Encoding. Perangkat lunak tersebut dibuat dengan menggunakan bahasa pemrograman Microsoft Visual Basic 6.0. Data yang akan dikompresi berupa teks file (.txt).

Pengujian sebanyak sepuluh kali dilakukan untuk membandingkan kinerja ketiga prekompresi pada kompresi LBE. Pada prekompresi Freq shift menghasilkan kenaikan ratio kompresi sebesar 43,11%. Pada prekompresi BWT menghasilkan kenaikan ratio kompresi sebesar 12,68%. Pada prekompresi MTF menghasilkan kenaikan ratio kompresi sebesar 51,5%.

Kata kunci : kompresi, dekompresi, Location Based Encoding, Frequency Shifter, Move-to-Front, Burrows-Wheeler Transform, prekompresi

PERFORMANCE COMPARISON OF FREQUENCY SHIFTER, BURROWS-WHEELER TRANSFORM AND MOVE-TO-FRONT PRECOMPRESSION ON LOCATION BASED ENCODING(LBE) COMPRESSION

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ABSTRACT

Technology improvements in information media is now commonly used. One of the information medias commonly used is text data. But there is a problem often encountered in it, and that is the need for large space to save data. To reduce the size of text data, a text compression is needed. Coders are used as precompression to improve the compression results.

In this Final Project, a software is designed to compare the performances of three precompression algorithms, which are Frequency Shifter, Burrows-Wheeler Transform and Move-to-Front on one compression algorithm, which is Location Based Encoding compression.The software was made using the programming language of Microsoft Visual Basic 6.0. The data that will be compressed is in the form of a file text (.txt).

Ten tests have been done to compare the performances of the three precompressions on LBE compression, Freq shift precompression results in increased compression ratio by 43,11%. BWT precompression results in increased compression ratio by 12,68%. MTF precompression results in increased compression ratio by 51,5%.

Keyword : compression, decompression, Location Based Encoding, Frequency Shifter, Move-to-Front, Burrows-Wheeler Transform, precompression

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