

Title: A Novel Approach to Select an Optimal Text Compression Method Based on Application

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Abstract: Substantial amounts of text data are now produced on many platforms, especially via social media and in various industries. These data are challenging to store on a local computer or to send over the internet. Compression is an effective way of reducing the size of the original data, saving storage space, and reducing transmission costs in cyberspace. Many text compressors have already been developed, some of which offer greater compression while others provide higher speeds. For data storage applications such as Google Drive, OneDrive, and Dropbox, the compression ratio is more significant over encoding and decoding time. However, in contrast, there are various applications, such as real-time messaging, where encoding time, decoding time, and compression ratio hold equal importance. The selection of a text compressor based on either the compression ratio or the compression or decompression speed is easy; however, the performance of a compressor depends on all of these parameters, and it is difficult to select a better compressor from a range of alternatives based on a combination of these parameters. In this work, we propose a technique for selecting the optimum text compressor by analyzing the data from each perspective. An analysis is also provided to confirm the authenticity of the proposed technique.

Keywords: Text compression Compression ratio Encoding time Decoding time Multi-criteria decision analysis (MCDA)

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