



Research Topic (4)

Title: Huffman data compression technique

Your report should cover the following points:

1. introduction to data compression
2. definition of data compression
3. general concepts and types of data compression
4. Huffman code: concept, algorithm, how it works, performance
5. Provide an implementation to Huffman compression that takes a text and generates the code for each character. The implementation will be delivered separately as code files and add a brief description of your implementation in your report.
6. Test your code using different test cases each representing an input text fed to the Huffman algorithm. Write the details of your test cases in the following template table. Add at least 5 different test cases.

Test Case	Input text (should be at least 30 characters)	Character Codes (a list of the codes generated for each character)	average number of bits per character
1			
2			
3			
4			
5			

7. Add a paragraph commenting on the results you got.

Instructions:

The form of the research should follow the following rules:

- a. Writing using Microsoft Word.
- b. using Time New Roman font.
- c. 14 Font size for text and 16 Bold for the title.
- d. single space between the lines.
- e. Page margins are 2.5 cm from top, bottom, right and left.
- f. The number of pages is not less than 5
- h. English language formulation should be correct and sound.
- i. Clarity of texts, pictures or drawings.
- j. Upload a compressed version of the whole project you implemented along with the files used for testing.
- k. Plagiarism check will be applied on submitted reports so both copying from another student, or copying directly from internet sources without using your own words is considered plagiarism and causes the rejection of the report.
- l. Upload the report as a PDF file to avoid format problems.
- m. Avoid writing your name or ID anywhere in the report or the code.

*With Our Best Regards,
Prof. Mohamed Hashem &
Dr. Wedad Hussein*