

COMP 3711 Design and Analysis of Algorithms
Spring 2015
Programming Assignment 2

Implement the Huffman's algorithm for finding an optimal prefix code in your favorite programming language. Download the following two .txt files:

http://course.cse.ust.hk/comp3711/homework/uniform_distribution.txt

http://course.cse.ust.hk/comp3711/homework/non-uniform_distribution.txt

After opening up these files in your browser, try using "save as" to save the files, instead of doing "copy + paste" (which might give you some additional line breaks). Each file should contain exactly 10,000 characters.

Run your program on each of the two .txt files, and compute the message size (in terms of bits) after encoding the file using the Huffman code. Note that you don't have to do the actual encoding and decoding to compute the size of the encoded message.

For additional challenge, you may try to implement a fully functional compressor/decompressor using Huffman's algorithm. Note that you will need to pack bits into words, and write the decoded message to a binary file. This part is completely voluntary.

What to submit:

1. A printout of your code of Huffman's algorithm, including the code of the heap.
2. The size of the encoded message using Huffman's code for each of the two files listed above.