

Assignment 4

Due: November 21, 2012

Group assignment: You are permitted to work in teams of 1 to 4 students. No special permission will be given for larger groups. Write down an object-oriented program in C++ or Java or Ocaml or another object-oriented programming language. Submissions that do not use OO concepts will not be evaluated.

In this assignment, we will implement the Huffman encoding and decoding algorithm. Compress the files located at:

<http://sydney.edu.au/engineering/it/~matty/Shakespeare/texts/tragedies/juliuscaesar>

<http://sydney.edu.au/engineering/it/~matty/Shakespeare/texts/tragedies/hamlet>

<http://sydney.edu.au/engineering/it/~matty/Shakespeare/texts/tragedies/othello>

<http://sydney.edu.au/engineering/it/~matty/Shakespeare/texts/tragedies/macbeth>

, and then de-compress these files. Compute the ratio of the compressed files and the original files for each of these inputs.

We will execute the Makefile in your submission folder before we make the call to `.huffmanencode <filename>` and `.huffmandecode <filename>`.

Please submit the source-code as a zipped folder named `asg4.zip` to the instructor and the TAs on November 21, 2012 - do not include any pre-compiled binaries. **Submit a (hard copy) report summarizing the data structures and algorithms used and their run-time complexity to the TAs. Also, include a table in your report indicating the ratio of the compressed files and the original files for each of the inputs.**