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github : <https://github.com/oakkar8/CS3700/tree/master/Project1>

a) the original file size is 44841 byte

b) time taken to build tree : 46
time taken to build file : 51

c) 56 percentage smaller

e) Decompression of the huffman encoding cannot be speedup using threads because the file is build up of all 0s and 1s so it is impossible to chuck up the bits and traverse the tree to search for the word.

Code print out

This print out is with single thread

time taken to build tree : 46
time taken to build file : 51
before : 44841
after : 25151
56 percentage smaller

This print out is with multi threaded

I split the size of the charArray by 4 and using 4 threads to create a node and put it in the blockingqueue but I didn't see much improvement here. I don't think encoding file and building tree can be speed up by using parallel.

time taken to build time in parallel : 44
time taken to save it in file in parallel : 45
before : 44841
after : 25151
56 percentage smaller