Assignment 6 Write-up Document

Zihua Li

CSE 13S: Computer Systems and C Programming

University of California, Santa Cruz

ABSTRACT

This writeup document includes everything I learned from this assignment that I could remember.

Keywords: Lempel-Ziv Compression, C Programming, LZ78

DIFFICULTIES

I had a hard time trying to understand the Lempel-Ziv compression algorithm, as well as Trie Node. I went through countless resources on the Internet and videos and books, eventually I overcame the difficulty of starting to code. Everything did get better a little bit as I started to code.

Soon, I encountered even worse difficulties, including segfaults, wrong data output, etc... I can make a hundred examples if I remembered all of them, to be honest my brain is nearly shut-down since I finished the program, it has burned out all the energy stored in there. I have learned a big lesson from a decompression problem, program stops decompression even though there is more input. I have made improvements on wordtable and decode to make the problems dissapear.

stdin had some problems as well, like the ctrl+d didn't work, this took some head-scatching, eventually was resolved by making modifications on infile.

Another problem occured, the '-v' command didn't work and this is quite ridiculous, took a very long time to figure this out, just had to move the optVerbose condition before closing the file.

WHAT I HAVE LEARNED IN THIS ASSIGNMENT

Enhanced my understanding to pointers, learned about trie node, data structure, and basis of compression. Also about how to accomplish something in a more efficient way, binary pairs, playing with bits and bytes. They did cause some psychological damage to me, but when I look at the completed program, it gets better. LZ compression is very interesting, it is something that I have never been exposed before. The curiosity is one of the things that supported me going through the assignment.

THANK YOU

Thanks to my family for supporting and encouraging me to knock down the difficulties, not to give up.