**Archiving Challenge**

**BrieAnn Haberl**

**Buena Vista University**

**CMSC432 Operating Systems**

**Dr. Nathan Backman**

**Date: 12/12/2023**

**Evaluate Solutions**

bvArchive in my opinion was much easier than bvUnarchive it took me roughly 5-6 hours to get it mostly working and formatting functional. Creating bvArchive was relatively straightforward at first my focus was just getting the program to put everything into one file so the output initially looked like this:

cccccccccccccccccccccccccccccccc

aaaaaaaaaaaaaaaa

bbbbbbbb

My next concern for the plan of attack was how I wanted to go about my formatting for keeping track of the structure and what elements for this I wanted to include to set it up to unarchive. I thought about formatting tags and grabbing the names of the files to make things easier to parse later. I ended up using start and end flags for the directory name and for the files themselves which each includes name of file, bytes of file, and file content. Initially, I overlooked the importance of storing directory names within the .data file with its own set flag (though I am sure I could have gotten this to work it made things more difficult if there were any spaces) this oversight didn't change anything for creating the archive it did affect unarchive. The final format produced by bvArchive for the example directory that was on kay and its files followed this structure:

#DIRECTORY\_START#

sampleDir

#DIRECTORY\_END#

#FILE\_START#

C.txt

33

cccccccccccccccccccccccccccccccc

#FILE\_END#

#FILE\_START#

A.txt

17

aaaaaaaaaaaaaaaa

#FILE\_END#

#FILE\_START#

B.txt

9

bbbbbbbb

#FILE\_END#

bvUnarchive took much longer to do than bvArchive it was a more complex process instead of just shoving everything into a file I now do the opposite and recreate a directory structure from a single file. This took a lot more thought of how I was going to read in and store information about the directory and files to accurately recreate them where they should live. I ran into some issues with files not initially being created but the directory was being made some helpful print statements helped to figure out what went wrong so that I could fix the way I was comparing and writing files.

Overall I think the project went okay I learned some stuff on the way. I am incredibly glad you did not make hw\_7 the final that would have been much worse as that assignment did not go very well and I was feeling very ready to be done. I did feel quite the time crunch but I was able to make it work once I got the bulk of my other work done for the week. I initially expected this to be the same level of difficulty as hw\_7 but was pleasantly surprised that it went much better than I thought it would go. It could just be my burnout towards the end of the semester here but I just did not have much left in me for anymore big projects so this was a nice way to finish the semester. Did not realize that there was a way to do testing with diff to check differences I was doing all my checking by checking file properties and contents that is much more time consuming but its good to know as I find testing to be difficult sometimes so its nice to learn something new that makes it easier for me.