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Github: coder-j-0090 CSC415 Operating Systems

Assignment 5 – Buffered I/O

Description:

This program is a C program designed to copy a certain number of bytes from a given file. After receiving and counting bytes, the program opens the file and reads data into the buffer.

Approach:

Before working with any of the functions, I should be more careful about what I choose for b_fcb struct to make sure I open the right file in the right way.

For the b_open function, the program initializes an FCB using GetFileInfo and b_getFCB, creating a buffer of B_CHUNK_SIZE with position and bytes set to zero. It's stored in fcbArray, and the file descriptor will return.

In b_read, the data will be read by buffer, check the file size and end of the file. This process includes looping to read requested bytes, using memcpy to copy data, then update positions in the buffer. The function calls LBAread only if it needs to avoid unnecessary reads.

With b_close, the buffer gets free, and the file information will be set to null.

Issues and Resolutions:

Issue 1: I ran the code with "make run", but it didn't print out the text. It didn't print out the given expected result. It printed out
"gcc -c -o b_io.o b_io.c -g -I.
gcc -o Kim_Junyoung_HW5_main b_io.o buffer-main.o -g -I.
./Kim_Junyoung_HW5_main DATA DecOfInd.txt CommonSense.txt"
and the file name. I wrote a code to check and there was "File not found: BadFileName.bad" as an extra line of result.

Resolution : It shows I fail to locate a file with GetFileInfo(). It shows my program can't find the correct file. So, I re-wrote the file with clearer structure variable name, which helped me to have more understanding of my code, so I could check if every code is working the way I want. It worked, but I still haven't figured out what was I doing wrong in the first try.

Analysis:

N/A

Screenshot of compilation:

```
student@student:~/Documents/csc415-assignment-5-buffered-io-coder-j-0090$ make clean
rm b_io.o Kim_Junyoung_HW5_main
student@student:~/Documents/csc415-assignment-5-buffered-io-coder-j-0090$ make
gcc -c -o b_io.o b_io.c -g -I.
gcc -o Kim_Junyoung_HW5_main b_io.o buffer-main.o -g -I.
```

Screen shot(s) of the execution of the program: