Lab05

Two weeks ago we learned about data structures used in FAT filesystems, and you created a tool to browse FAT-like disk images, based on the "Disk" library I provided for reading/writing blocks.

During the next few weeks I'd like you to build a similar tool for browsing Ext-like disk images! It should be built on top of the "Disk" library just like before and should provide a nearly identical look/feel to your current tool. You're welcome to re-use any code from your previous assignment to bootstrap the process; you will just need to replace the FAT-parsing parts with Ext-parsing code. 😊

Attached to the drop box is another "disk.img" file, this time in Ext-like format. Again, it contains several files and directories, and uses a block size of 512.

When run, your new tool should print the disk label, and then let the user do any of the following...

- dir — List contents of current directory. Print type, size (for files), and name.
- cd <dir> — Change directory ("cd .." should go to the parent directory)
- read <file> — Read and print the contents of a file.
- pwd — Print the current working directory.
- stat <file> — Print the inode information for this file. ← NEW!

As you work, test your program against the provided disk image. Ultimately you should be able to browse the directories in the image, and read any files you find.

Deliverables:

Please turn in…

- Your code, as plaintext file(s).
- A screenshot of it running on the provided disk image, showing that each command works.

Stretch goals:

Love programming? Having fun? Want to take it a step further? Here are a few other commands you might enjoy trying to implement. To be clear, these are totally 100% optional, only for fun, only if you want to. You can earn full credit without doing any of these, don't feel obligated. 😊

- write <file> — Make a new file called <file> and enter data
- mkdir <dir> — Make a new directory called <dir>
- del <file> — Delete a file called <file>
- rmdir <dir> — Delete the whole directory <dir>
- link <name> <target> — Link <name> to <target>