

UNIX Programming Assignment 3

Due date : 2016/11/1 23:59

Demo time: 2016/11/1 18:30~22:00

Demo room: EECS 328

a) (3%) Write a utility like `cp(1)`, say `lcp`, that copies a file containing holes, **without copying the hole to the target file. Instead, your utility writes “\0” to fill those holes in the target file.**

- **`lcp` only needs to support basic copy feature; copying a file to another file.**
(usage : `lcp <source_file> <destination_file>`)
- **Your output file should be identical to the original input file (size, content), but the block usage on the disk is different.**

Sample output

8 -rw-r--r-- 1 mao mao **16394** 10 月 28 12:47 file_with_hole.txt

20 -rw-rw-r-- 1 mao mao **16394** 10 月 28 12:48 output.txt

- You need to check how to create a file with holes as explained in Chapter 3.
- The test cases will be regular files, and you don't have to handle any unusual exceptions.
- Submit your code and Makefile via iLMS

b) (2%) In Section 4.22, our version of `ftw`, called `ftw8.c`, never changes its directory. Modify this routine so that each time it encounters a directory, it uses the **`chdir`** function to change to that directory, allowing it to use the filename and not the pathname for each call to **`lstat`**. When all the entries in a directory have been processed, execute **`chdir("..")`**. Compare the time consumed by this version and the version in the text book.

- Trace the `ftw8` source code given by TA. (compile with “`make ftw8`”)
- Modify the code with **`chdir`**
- Submit your code, Makefile, and the observations in a text file via iLMS