

Chapter 13 (Page 1 through 14)

Purpose: This assignment provides experience with structured files. You also do a couple investigations into the Unix file structure.

Task 1)

Get a copy of the `structured_file.c` program. Complete the missing functions.

You will need to complete `clearFile`, `writeRecord`, and `readRecord`.

Task 2)

Compute how much disk the inodes use.

Assume you have a 32 gigabyte disk. For simplicity, for a gigabyte we will use 2^{30} bytes, so the disk size is 2^{35} . Assume one inode is allocated for every 2048 bytes on disk (2^{11}). Assume an inode is 64 bytes (2^6).

How many bytes of the disk are allocated to inodes? If you want, you may give the answer as a power of 2.

Task 3)

Use the `free` command to examine how many kilobytes of RAM are allocated to buffers.

Task 4)

Use the `df` command to inspect the percent of the inodes that have been allocated on the disk. Also report the percentage of the disk space that is allocated.

Demo: Your task 1 code.

Submit: A printed or handwritten sheet with calculations and answers to task 2, 3, and 4.