操作系统作业6

**姓名，学号**

1. Consider a RAID organization comprising five disks in total, how many blocks are accessed in order to perform the following operations for RAID-5 and RAID-6?

a. An update of one block of data

b. An update of seven continuous blocks of data. Assume that the seven contiguous blocks begin at a boundary of a stripe.

1. Explain what open-file table is and why we need it.
2. Explain the concept of file and directory, and what does “755” mean for file permission?
3. Explain the problems of using continuous allocation for file system layout and how to solve them.
4. What are the advantages of the variation of linked allocation that uses a FAT to chain together the blocks of a file? What is the major problem of FAT?
5. Consider a file system similar to the one used by UNIX with indexed allocation, and assume that every file uses only one block. How many disk I/O operations might be required to read the contents of a small local file at */a/b/c* in the following two cases? Should provide the detailed workflow.

a. Assume that none of the disk blocks and inodes is currently being cached.

b. Assume that none of the disk blocks is currently being cached but all inodes are in memory.

1. Consider a file system that uses inodes to represent files. Disk blocks are 8-KB in size and a pointer to a disk block requires 4 bytes. This file system has 12 direct disk blocks, plus single, double, and triple indirect disk blocks. What is the maximum size of a file that can be stored in this file system?