2013 - 2014 BSS Practicum

Exercises Week 5

Chapter 11

Exercise 1.1 Linked Allocation
What are the advantages of the variation of linked allocation that uses a FAT to chain together the blocks of a file?

Chapter 12

Exercise 1.2
Could a RAID Level 1 organization achieve better performance for read requests than a RAID Level 0 organization (with nonredundant striping of data)? If so, how?

Chapter 13

Exercise 1.3
1.2 What are the advantages and disadvantages of supporting memory-mapped I/O to device-control registers?

Exercise 1.4
Describe three circumstances under which blocking I/O should be used. Describe three circumstances under which nonblocking I/O should be used. Why not just implement nonblocking I/O and have processes busy-wait until their device is ready?

Chapter 16

Exercise 1.5
Explain why doubling the speed of the systems on an Ethernet segment may result in decreased network performance. What changes could help solve this problem?

Exercise 1.6
The original HTTP protocol used TCP/IP as the underlying network protocol. For each page, graphic, or applet, a separate TCP session was constructed, used, and torn down. Because of the overhead of building and destroying TCP/IP connections, performance problems resulted from this implementation method. Would using UDP rather than TCP be a good alternative? What other changes could you make to improve HTTP performance?