FileSystem

Question 1: Answer the following questions for a hard drive which stores data using indexed allocation method. Note that the drive uses two level indexing and size of one block in the hard drive is 200 bytes. Each entry in the index is sized 4 bytes.

- How many entries are allowed in one index?
- How many bytes does one entry of the first level index represents?
- How many bytes does one entry of the second level index represents?
- To read byte 20,410; which element of first level index should be read?
- To read byte 20,410; which element of second level index should be read?

Memory Management

Question 2: Consider a system with 80% TLB hit ratio, 50 nano-seconds time to search the associative registers , 750 nano-seconds time to access memory. Find the time to access a page:

- When the frame number to be retrieved is in associative memory.
- When the time to access a page is not in associative memory.
- Find the effective memory access time.

Virtual Memory

- What increases the page-fault rate?
- What happens when the page fault rate becomes too high?
- What is the difference between local replacement and global replacement?