

Midterm

1. [20 pt] Explain the different jobs of the short-term and the long-term schedulers. Which scheduler is used more often for a program, and what would this mean which should be faster?
2. [20 pt] Given a system where the time to access a byte in cache is 15 ns, the time to move a byte in main memory to cache is 50 ns where it can now be referenced, and the time to read a sector on the disk into main memory is 900 μ s. [$\mu = 10^{-6}$; n = 10^{-9}]
 - (a) If the cache hit ratio is .85 and the main memory hit ratio is .95, what is the average access time for a byte?
 - (b) What is the average access time if the main memory hit ratio drops to .65? [Cache hit ratio unchanged]
3. [20 pt] Compare the external media of Disk, CD-ROM and tape with respect to organization of data on the medium, to the ability to do random accessing of the data, and to the relative access speeds.

4. [20 pt] Explain why we have two kinds of main memory: RAM and ROM. Why do we have the various kinds of ROM, since they all have the same basic purpose?
5. [20 pt] Explain why Clock Speed is not a good measure between different families of CPUs.