University of Rochester	Computer Systems (CSC256/CSC456)

Homework 2
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You will not hand in the answers to this homework assignment. Instead, at the beginning of class on **19 February 2002** you will be asked to solve one of the problems as a closed notes, closed book quiz. The question to be solved will be randomly selected.

1. RAID level 3 is able to correct single-bit errors using only one parity drive. What is the point of RAID level 2? After all, it can only correct one error and takes more drives to do so.

2. In class, we described the basic lifetime of a process with a state diagram with three states and many transitions. Name and define each of these states and explain the transitions between them.

3. Disk requests come in to the disk driver for sectors on tracks 10, 22, 20, 2, 40, 6, and 38, in that order. A seek takes 6msec per cylinder moved. How much seek time is needed for

   - FCFS
   - SSTF

   Assume the head is initially at track 20. Show your work.

4. In some priority-based scheduling algorithms, different time-quantum sizes are given to different priority levels. Name one advantage and one disadvantage to this scheme.

5. Read the man page for `nice`. What is the default `nice` level for a user process? Briefly describe the effect of running a program at nice level 19 versus a process running at nice level 0.

6. In general, a user is not allowed to decrease the nice level of a process even within the 0-19 range. Why not? Hint: the root user is allowed to change the nice value of any process on the system.