

**CSE 760: Au 2009: Homework I**  
**Due in Class Monday, October 12th**

(No solutions turned in after the end of the class that day will receive credit)

- 1) Implement a writers priority solution to the readers/writers problem using semaphores.
- 2) Implement a solution to the readers/writers problem using monitors which executes the requests in FCFS manner. If there are consecutive readers, they should be able to access the file concurrently.
- 3) Write a semaphore based solution to the readers – writers problem that works as follows: If readers and writers are both waiting, then it alternates between readers and writers. Otherwise, it processes them normally, i.e. readers concurrently and writers serially.
- 4) Write a monitor based solution to the above problem.
- 5) A file is to be shared among different processes, each of which has a unique number. The file can be accessed simultaneously by several processes, subject to the following constraint: The sum of all unique numbers associated with all the processes concurrently accessing the file must be less than  $n$ . Write a monitor to coordinate access to the file.