

Problem Set 16

CS 411

Due at the beginning of class on the first class day of the following week.
Sections 11.1–7

1. Is disk scheduling, other than FCFS scheduling, useful in a single-user environment? Explain your answer.
2. Suppose that a disk drive has 5,000 cylinders, numbered 0 to 4,999. The drive is currently serving a request at cylinder 2,150, and the previous request was at cylinder 1,805. The queue of pending requests, in FIFO order, is:

2,069; 1,212; 2,296; 2,800; 544; 1,618; 356; 1,523; 4,965; 3,681

Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following disk-scheduling algorithms?

- (a) FCFS
 - (b) SCAN
 - (c) C-SCAN
3. Explain why NVM devices often use an FCFS disk-scheduling algorithm.