

Name: Solution Key

CSE 421/521 Quiz 4

Question 1 (13pts) : Assume a disk with 400 cylinders is accessing cylinder 50 and just accessed cylinder 51 a few milliseconds ago. Further assume that the FIFO queue of pending requests is 20, 60, 220, 250, 190. What order will the pending requests be satisfied using the following policies, and how many cylinders will the head need to move to satisfy these requests in each case?

(a) LOOK disk-scheduling policy?

Answer:

The requests will be server in this order: 20, 60, 190, 220, 250

The head will move 260 cylinders

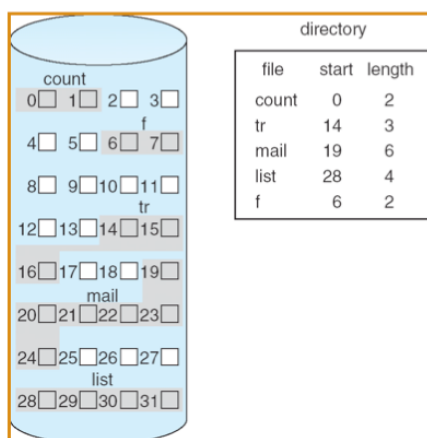
(b) Shortest Seek Time First (SSTF) disk-scheduling policy?

Answer:

The requests will be server in this order: 60, 20, 190, 220, 250

The head will move 280 cylinders

Question 2(12pts): Given the file allocation table below, show the “free block list” using the bit-map, counting, and grouping (n=3) approaches.



Answer:

Bitmap: 00111100111111000110000001110000

Counting: (2,4) ; (8,6) ; (17,2) ; (25,3)

Grouping: 2[3, 4, 5] ; 5[8, 9, 10]; 10[11, 12, 13] ;
13[17, 18, 25]; 25[26, 27, -1]