Assignment no :- 8

Aim :- Implement the C program Disk scheduling Algorithm SSTF, SCAN, C-Look considering the initial head position moving away from spindle

Objectives : To study
Disk structure
Disk scheduling Algorithm

Theory :-

one of the responsibilities of OS is to use the hardware efficiently for the disk drives, meeting this responsibility entails having fest access time & long disk handwith. Both the access improved by managing the order in which disk I/O requests are serviced which is called disk scheduling. First is FCFS. is fo and is not provide fastest service. In the SCAN algorithm, the disk arm starts of one end and move towards the other end, their direction is reversed, & servicing continues. The head continuosly scan back & forth across the dish cscan is variant of scan designed to provide like SCAN. C-SCAN moves the head from one end to the disk to other servicing requests along the way. When the head reaches the other end servicing any request on retuning trip

Overview :

* over the past 30 years, the increase in

speed processors and main memory has far
outstripped that of disk access, with processor
and main memory speed increasing by about
two orders of magnitude compared to one
order of magnitude for disk

* The result is that disk are currently of least
four order of magnitude slower than main memory
* This gap is expected to continue into
foreseeable future
* Thus, the performance of disk storage
subsystem is of vital concern & much research
has gone into scheme for improving thel
performance

Disk Performance Parameters

* When the disk drive is operating, the disk is
rotating at constant speed
* To read or write the head must be positioned
at desired track & at the beginning of desired
sector on the track
* once track is selected the desired controller
waits until the appropriate sector rotates to
line up with the head
* The time it takes from beginning of sector to
head is known as rotational delay or
rotational latency
* ? The sum of seek time if any rotational delay
is is access time, the time it takes to get
into position to read or write

* onces the head is an position, the read
  of write operation is then performed as the
  sector moves under the head : this is the
  data transfer position of operation

Seek time

* Seek time is the required to move the
  disk one to required track
* The seek time consists of two keys componen
  the initial startup time and time taken to
  traverse the cylinder that have been crossed
  once the access arm is up to speed
* The seek time can be approximate with the
  following formula

$$TS = m + n + s$$

where,

TS = estimated seek time
n = number of tracks traversed
m : constant that depends on the disk dri
s : startup time