Disk Scheduling

Requests:

12, 1, 19, 15
R T S R T S R T

Smallest # first:

1, 12, 15, 19
S S S T S T S T

Minimize SEEK Time.

12, 15, 19, 1
R R R R
T T T T

(SSTF) Shortest seek Time First.
Starvation!

Disk Scheduler

Nearest Block First (NBF)

12, 11, 10, 15, 16, 17, 20, 11

SSTF

Block 0

n - blocks

Block n-1

4KB
Elevator Algorithm

Queue 1
12, 1, 15, 20, 16
FREEZE

Queue 2
17, 11, 10, 21, 5

SCAN

Sweep: always happens in one direction
eg. inner → out

C - SCAN
Circular

F - SCAN
C-SCAN
Circular.

Sweep \rightarrow Only outer to inner.

012012012

Why not both direction sweep?
012101210?

Elevator! 10
？

SEEK + Rotation
Shortest Positioning Time First (SPTF)
Access

11 or 0
\Rightarrow It depends.

SPTF is implemented where?
Yes! Disks have their own scheduler.

\Rightarrow OS
\Rightarrow Disk
SEEK + ROTATION

SPTF - Shortest Positioning Time First
SATF - Access shortest

BSATF - Bounded Access Time First

\[ \downarrow \]
SATF + Elevator/scan.

Disk

Software
Disk Scheduler!