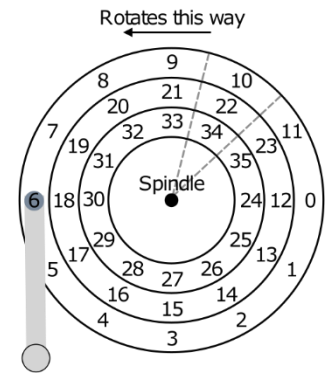


Consider a disk with three tracks shown in the figure. Assume that each track contains 12 sectors. The disk head is currently positioned over sector 6 of the outermost track. The direction of rotation is counter-clockwise. Also assume that the rotational speed is 1 degree per time unit. Thus, to make a complete revolution, it takes 360 time units. Transfer begins and ends at the halfway point between sectors. For example, to read sector 10, the transfer begins halfway between 9 and 10, and ends halfway between 10 and 11 (depicted by the dashed lines in the figure). A seek to an adjacent track takes 40 time units. The default scheduling policy is FCFS.

The queue of pending requests, in FIFO order, is:  
3, 14, 4, 17

Compute seek, rotation, and transfer times that the disk arm moves to satisfy all the pending requests for each of the following disk-scheduling algorithms.

- FCFS
- SSTF




---

**Answer:**

- FCFS

Block: 3 Seek: 0 Rotate:255 Transfer: 30 Total: 285

Block: 14 Seek: 40 Rotate:260 Transfer: 30 Total: 330

Block: 4 Seek: 40 Rotate:350 Transfer: 30 Total: 420

Block: 17 Seek: 40 Rotate:320 Transfer: 30 Total: 390

TOTALS Seek:120 Rotate:1185 Transfer:120 Total:1425

- SSTF

Block: 3 Seek: 0 Rotate:255 Transfer: 30 Total: 285

Block: 4 Seek: 0 Rotate: 0 Transfer: 30 Total: 30

Block: 14 Seek: 40 Rotate:230 Transfer: 30 Total: 300

Block: 17 Seek: 0 Rotate: 60 Transfer: 30 Total: 90

TOTALS Seek: 40 Rotate:545 Transfer:120 Total: 705

(This practice is adopted from a previous tutorial, you can refer to the CS3103-Disk-tutorial.pdf and disk\_simulator.zip.)