Quiz 7: Disk Scheduling

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Due date: noon of Sunday Apr 24, 2022

[Question 1] Given the following equation and table:
Average I/O time = average access time + (transfer amount / transfer rate) + controller overhead

What is the average I/O time to transfer 1MB block on a 10000 RPM disk with a 5ms average seek time, 2Gb/sec transfer rate with a .02ms controller overhead?

Spindle [rpm]	Average latency [ms]
4200	7.14
5400	5.56
7200	4.17
10000	3
15000	2

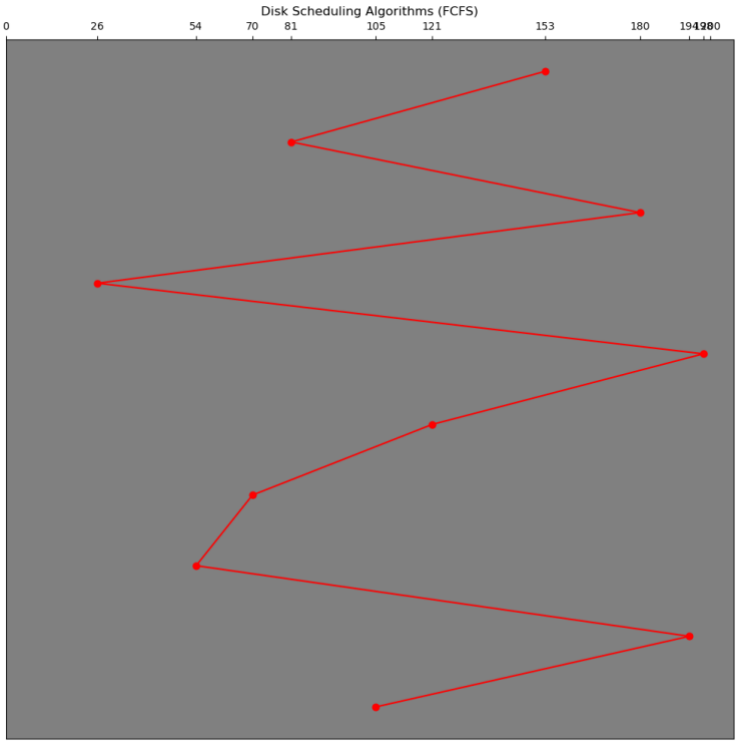
Average I/O time = 5ms + 3ms + 0.5 ms + 0.02 ms = 8.7 ms

[Question 2] Compare the following:

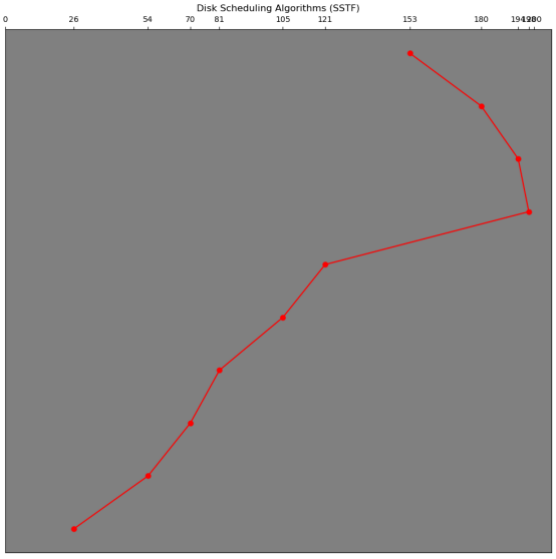
	cost	**speed**	**size**
Magnetic disk drive	mid	mid	30GB to 3TB
Solid state drive	high	high	30GB to 3TB
Magnetic tape	low	low	200GB to 1.5TB

[Question 3] For the following request queue: [153, 81, 180, 26, 198, 121, 70, 54, 194, 105]
Requests range from 0 to 200. Show illustrations of applying the following disk scheduling algorithms:

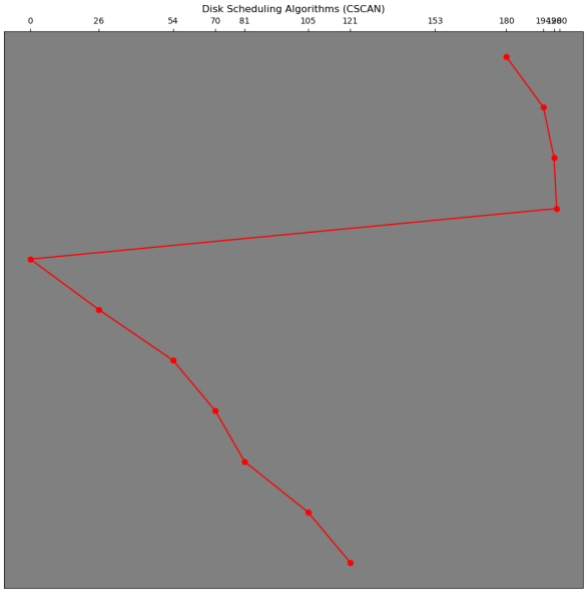
1. FCFS


Disk Scheduling Algorithms (FCFS)
0
26
54
70
81
105
121
153
180
fcfs

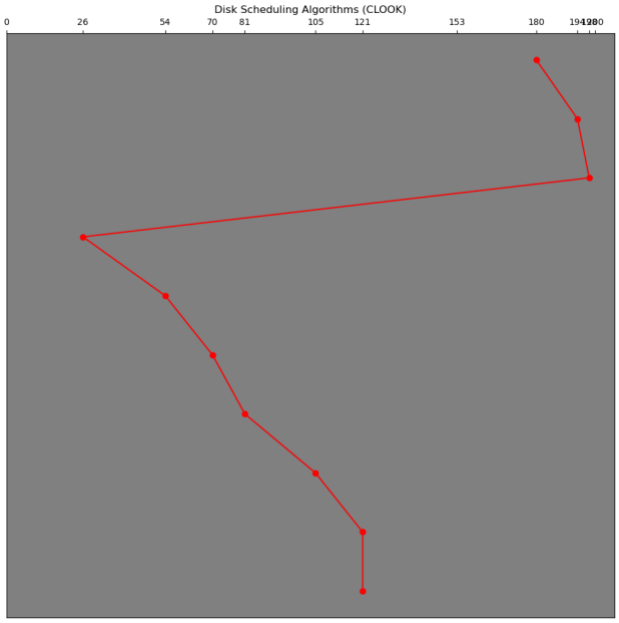
2. SSTF


Disk Scheduling Algorithms (SSTF)
0
26
54
70
81
105
121
153
180

3. C-SCAN



4. C-LOOK



[Submission]

Add your document to the *Quizzes* directory in your shared folder on Drive.