

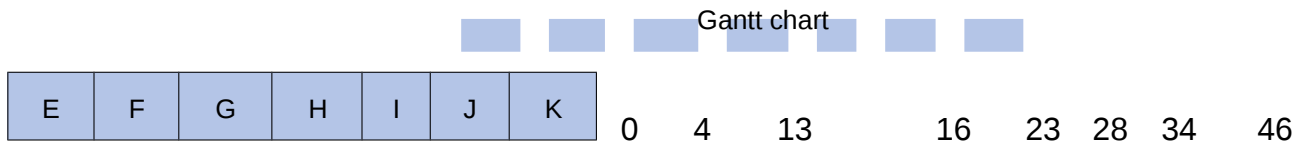
Task Performance

Process Scheduling

Process	E	F	G	H	I	J	K
Arrival Time	0	2	3	5	11	17	24
Bust Time	4	9	3	7	5	6	12

First-Come First-Serve

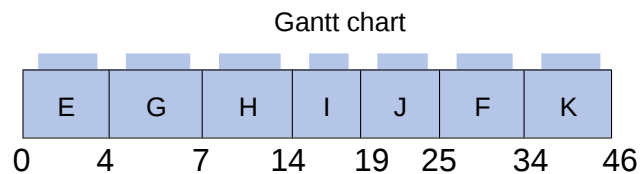
Finish Time	4	13	16	23	28	34	46
Turnaround Time	4	11	13	18	17	17	22
Waiting Time	0	2	10	11	12	11	10



Average Turnaround Time: $102/7 = 14.57$
 Average Waiting Time: $56/7 = 8.0$

Shortest Remaining Time First

Finish Time	4	34	14	19	25	7	46
Turnaround Time	4	32	9	8	8	4	22
Waiting Time	0	23	2	3	2	1	10

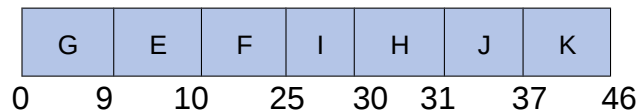


Average Turnaround Time: $87/7 = 12.43$
 Average Waiting Time: $41/7 = 5.86$

Round Robin: Quantum = 3

Finish Time	10	25	9	31	30	37	46
Turnaround Time	10	23	6	26	19	20	22
Waiting Time	6	14	3	19	14	14	10

Gantt chart



Average Turnaround Time: $126/7 = 18$
Average Waiting Time: $80/7 = 11.43$

Answer the following items **(5 items x 5 points)**:

- a. Among the three (3) process scheduling algorithms that you have performed, which do you think is the most efficient and why?
 - Shortest Remaining Time First is efficient because it makes the processing of the jobs faster than the SJF algorithm, mentioned its overhead charges are not counted.
- b. Cite significant differences in the results of applying the First-Come First-Serve algorithm and Round Robin algorithm. Elaborate on your answer.
 - First Come First Served (FCFS) is a non-preemptive scheduling algorithm which means the process is allocated to the CPU in the order of their arrival. Meanwhile, contrary to FCFS, Round Robin (RR) is a preemptive scheduling algorithm.
- c. What could possibly happen if the value of the Quantum in Round Robin is increased to 5? Elaborate on your answer.
 - The Average Turnaround Time and the Average Waiting Time will both be shortened. This is because the quantum size influences the scheduler's fine-grainedness. Quantum sizes that are larger enhance the (temporary) unfairness between connections. Smaller quantum sizes improve fairness, but they also raise the link scheduler's computational needs because more rounds must be computed before a packet can be transmitted.
- d. In your opinion, why does the average turnaround time and waiting time vary per algorithm?
 - Every scheduling algorithm has a distinct goal and performance criteria, and depending on them, it may or may not be an efficient algorithm, resulting in a range of average turnaround and waiting times.
- e. Would you suggest the utilization of the Round Robin algorithm for process scheduling in a file management system? Why or why not?
 - Yes, because it is simple, easy to implement, and free of CPU starvation because all processes are given an equal amount of the CPU. It is also one of the most often utilized CPU scheduling techniques as a core.