

SINGLE QUEUE

Turnaround Time	n=1	n=2	n=4	n=8
FCFS	403	103	99	97
SJF	305	102	101	97
RR	144	117	107	102

Finish time	n=1	n=2	n=4	n=8
FCFS	2755	2244	2219	2213
SJF	2273	2288	2281	2195
RR	3483	2284	2265	2248

MULTIPLE QUEUE (RM)

Turnaround Time	n=1	n=2	n=4	n=8
FCFS	400	122	101	102
SJF	299	122	99	101
RR	1016	165	101	102

Finish time	n=1	n=2	n=4	n=8
FCFS	2705	2309	2257	2279
SJF	2238	2257	2225	2236
RR	3154	2316	2218	2259

MULTIPLE QUEUE (LM)

Turnaround Time	n=1	n=2	n=4	n=8
FCFS	142	122	146	146
SJF	318	146	146	146
RR	224	147	148	154

Finish time	n=1	n=2	n=4	n=8
FCFS	3426	2309	3500	3538
SJF	2307	3513	3527	3545
RR	3579	3262	3426	3578

Time Quantum for RR Average Turnaround Time / Finish Time

RR n = 1	Q = 10	Q = 20
S	144 / 3483	675 / 2893
M RM	1016 / 3154	654 / 2925
M LM	224 / 3579	206 / 3549

RR n = 2	Q = 20	Q = 40
S	117/2284	110/2283
M RM	165/2316	154/2298
M LM	147/3262	150/3323

RR n = 4	Q = 50	Q = 80
S	107/2265	102/2251
M RM	101/2218	102/2220
M LM	148/3462	142/3378

RR n = 8	Q = 80	Q = 100
S	102/2248	100/2237
M RM	102/2259	101/2220
M LM	154/3578	142/3396

Analyze

In general we can do the following observations about our experiments:

1. As the number of threads increase, the average turnaround time and finish times tend to decrease. We can see a significant change in going from one processor to two almost in any case.
2. Especially for the one processor case we can observe that SJF performs much better than FCFS in terms of the average turnaround time, which is expected. We also expect that round robins average turnaround time to a little bit higher with the trade of better response time, but we don't analyze the response time in this project. However, in our experiment RR seems to perform similar to SJF and FCFS.
3. We see a bad finish time performance for the LM method, due to providing a precise LM method algorithm by using a similar approach to readers writers problem. We block all the queues and find exactly the smallest queue size, but by doing that we need to wait all threads to not access the ready queues.
4. Also our program might show different results, on a different hardware environments since this is a multi threaded program.
5. For the time quantum of RR, as the time quantum of RR increase it comes similar to the FCFS algorithm, and the average turnaround time seems to slightly decrease which is expected.