

CPSC457 - PRINCIPLES OF OPERATING SYSTEMS

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Assignment 4

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Process	Arrival Time	Burst Time	Process Priority
P1	0	12	High
P2	2	1	Medium
P3	3	3	Low
P4	5	1	Medium
P5	9	5	High

Table 1: 5 processes with arrival times, CPU burst times and priorities. All times are given in seconds. Only P3 uses priorities.

Q1 - SRTN scheduling

P1	P1	P2	P3	P3	P3	P4	P1	P1	P5	P5	P5	P5	P5	P1	P1	P1	P1	P1	P1	P1	P1	P1
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Average wait time = $(10+0+0+1+0)/5 = 2.2s$

Q2 - RR scheduling

P1	P1	P1	P2	P1	P3	P1	P4	P3	P1	P3	P5	P1	P5	P1	P5	P1	P5	P1	P5	P1	P1	P1
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There were 19 context switches. Average wait time = $(10+1+5+2+6)/5 = 4.8s$

Q3 - MLFQ scheduling

P1	P1	P1	P1	P1	P1	P2	P4	P3	P3	P3	P5	P5	P5	P5	P5	P1	P1	P1	P1	P1	P1	P1
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Q5 - Resource allocation and deadlocks

The system is not currently in deadlock. There is still a resource available to be used which can lead to a completion of a process and subsequent processes. The full execution sequence is as follows:

Sequence	Available
P5	0 1 0 -> 0 1 1
P2	0 1 1 -> 0 2 1
P4	0 2 1 -> 1 2 1
P1	1 2 1 -> 1 2 2
P3	1 2 2 -> 2 3 4