MLFQ Queue Process

Process Arrival

- Process 1 arrives at time 1 with burst time 2
- Process 2 arrives at time 2 with burst time 3
- Process 3 arrives at time 3 with burst time 4
- Process 4 arrives at time 4 with burst time 5
- Process 5 arrives at time 5 with burst time 6
- Process 6 arrives at time 6 with burst time 7
- Process 7 arrives at time 7 with burst time 8
- Process 8 arrives at time 8 with burst time 9

Queue States

Process Execution

At time 0, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

At time 1, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

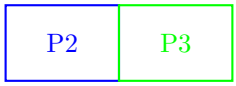
Process 1 is selected for execution from Priority Queue 2.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)

At time 3, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

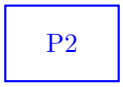


Process 2 is selected for execution from Priority Queue 2.

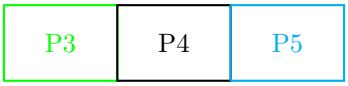
Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)

At time 5, the state of the queues is:
Priority Queue 1:



Priority Queue 2:

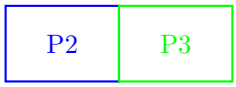


Process 3 is selected for execution from Priority Queue 2.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)

At time 7, the state of the queues is:
Priority Queue 1:



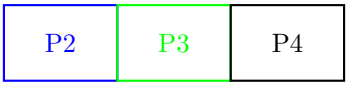
Priority Queue 2:

Process 4 is selected for execution from Priority Queue 2.

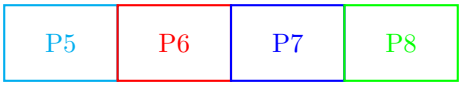
Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)

At time 9, the state of the queues is:
Priority Queue 1:



Priority Queue 2:



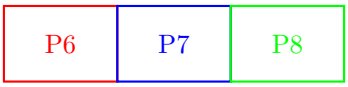
Process 5 is selected for execution from Priority Queue 2.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)

At time 11, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

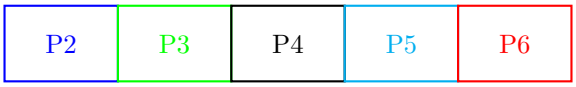


Process 6 is selected for execution from Priority Queue 2.

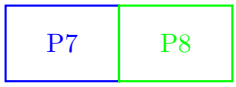
Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)

At time 13, the state of the queues is:
Priority Queue 1:



Priority Queue 2:



Process 7 is selected for execution from Priority Queue 2.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)

At time 15, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

Process 8 is selected for execution from Priority Queue 2.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)

At time 17, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

Process 2 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)

At time 18, the state of the queues is:
Priority Queue 1:

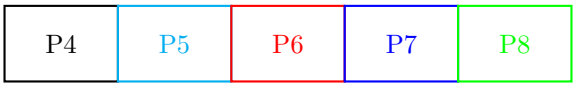
Priority Queue 2:

Process 3 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)

At time 20, the state of the queues is:
Priority Queue 1:



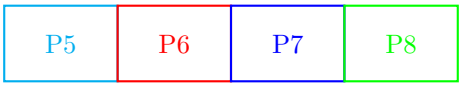
Priority Queue 2:

Process 4 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)

At time 23, the state of the queues is:
Priority Queue 1:



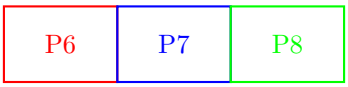
Priority Queue 2:

Process 5 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)

At time 27, the state of the queues is:
Priority Queue 1:



Priority Queue 2:

Process 6 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)
P6	[27, 31)

At time 31, the state of the queues is:
Priority Queue 1:

Priority Queue 2:

Process 7 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)
P6	[27, 31)
P7	[31, 35)

At time 35, the state of the queues is:
Priority Queue 1:

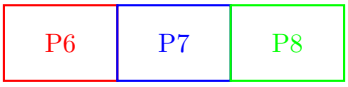
Priority Queue 2:

Process 8 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)
P6	[27, 31)
P7	[31, 35)
P8	[35, 39)

At time 39, the state of the queues is:
Priority Queue 1:



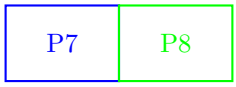
Priority Queue 2:

Process 6 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)
P6	[27, 31)
P7	[31, 35)
P8	[35, 39)
P6	[39, 40)

At time 40, the state of the queues is:
Priority Queue 1:



Priority Queue 2:

Process 7 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)
P6	[27, 31)
P7	[31, 35)
P8	[35, 39)
P6	[39, 40)
P7	[40, 42)

At time 42, the state of the queues is:
Priority Queue 1:

P8

Priority Queue 2:

Process 8 is selected for execution from Priority Queue 1.

Gantt Chart after this step

Process	Execution Interval
P1	[1, 3)
P2	[3, 5)
P3	[5, 7)
P4	[7, 9)
P5	[9, 11)
P6	[11, 13)
P7	[13, 15)
P8	[15, 17)
P2	[17, 18)
P3	[18, 20)
P4	[20, 23)
P5	[23, 27)
P6	[27, 31)
P7	[31, 35)
P8	[35, 39)
P6	[39, 40)
P7	[40, 42)
P8	[42, 45)

Step by Step Execution

Process	Arrival Time	Burst Time	Start Time	Completion Time	Turnaround Time
P1	1	2	1	3	2
P2	2	3	3	18	16
P3	3	4	5	20	17
P4	4	5	7	23	19
P5	5	6	9	27	22
P6	6	7	11	40	34
P7	7	8	13	42	35
P8	8	9	15	45	37