OS 2022fall 9.29 hw3

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运行环境：Windows 10 (pycharm)

1. 第七章
2. SJF：响应时间：(0 + 200 + 400)/3 = 200

周转时间：(200 + 400 + 600)/3 = 400

FIFO：响应时间：(0 + 200 + 400)/3 = 200

周转时间：(200 + 400 + 600)/3 = 400

1. SJF：响应时间：(0 + 100 + 300)/3 = 133.33

周转时间：(100 + 300 + 600)/3 = 333.33

FIFO：最优：先100，后200，最后300

响应时间：(0 + 100 + 300)/3 = 133.33

周转时间：(100 + 300 + 600)/3 = 333.33

最劣：先300，后200，最后100

响应时间：(0 + 300 + 500)/3 = 266.67

周转时间：(300 + 500 + 600)/3 = 466.67

1. RR：(200+200+200)

响应时间：(0 + 1 + 2)/3 = 1

周转时间：(598 + 599 + 600)/3 = 599

1. 若FIFO的队列中任务耗时的顺序与SJF的顺序相同，即FIFO中运行时间短的任务在队列前面（仅耗时相同可以调换顺序）。此时FIFO与SJF任务的处理顺序相同，周转时间相同。
2. 量子长度大于等于最长的工作负载的长度时
3. 随着工作长度的增加，响应时间会越来越长。

以下结果使用教材自带的scheduler.py得出，任务时间为(100,100,100), (500,500,500), (1000,1500,2000)

E:\ostep-homework-dev-zhongyl\cpu-sched>scheduler.py -l 100,100,100 -p SJF -c

ARG policy SJF

ARG jlist 100,100,100

Here is the job list, with the run time of each job:

Job 0 ( length = 100.0 )

Job 1 ( length = 100.0 )

Job 2 ( length = 100.0 )

\*\* Solutions \*\*

Execution trace:

[ time 0 ] Run job 0 for 100.00 secs ( DONE at 100.00 )

[ time 100 ] Run job 1 for 100.00 secs ( DONE at 200.00 )

[ time 200 ] Run job 2 for 100.00 secs ( DONE at 300.00 )

Final statistics:

Job 0 -- Response: 0.00 Turnaround 100.00 Wait 0.00

Job 1 -- Response: 100.00 Turnaround 200.00 Wait 100.00

Job 2 -- Response: 200.00 Turnaround 300.00 Wait 200.00

Average -- Response: 100.00 Turnaround 200.00 Wait 100.00

E:\ostep-homework-dev-zhongyl\cpu-sched>scheduler.py -l 500,500,500 -p SJF -c

ARG policy SJF

ARG jlist 500,500,500

Here is the job list, with the run time of each job:

Job 0 ( length = 500.0 )

Job 1 ( length = 500.0 )

Job 2 ( length = 500.0 )

\*\* Solutions \*\*

Execution trace:

[ time 0 ] Run job 0 for 500.00 secs ( DONE at 500.00 )

[ time 500 ] Run job 1 for 500.00 secs ( DONE at 1000.00 )

[ time 1000 ] Run job 2 for 500.00 secs ( DONE at 1500.00 )

Final statistics:

Job 0 -- Response: 0.00 Turnaround 500.00 Wait 0.00

Job 1 -- Response: 500.00 Turnaround 1000.00 Wait 500.00

Job 2 -- Response: 1000.00 Turnaround 1500.00 Wait 1000.00

Average -- Response: 500.00 Turnaround 1000.00 Wait 500.00

E:\ostep-homework-dev-zhongyl\cpu-sched>scheduler.py -l 1000,1500,2000 -p SJF -c

ARG policy SJF

ARG jlist 1000,1500,2000

Here is the job list, with the run time of each job:

Job 0 ( length = 1000.0 )

Job 1 ( length = 1500.0 )

Job 2 ( length = 2000.0 )

\*\* Solutions \*\*

Execution trace:

[ time 0 ] Run job 0 for 1000.00 secs ( DONE at 1000.00 )

[ time 1000 ] Run job 1 for 1500.00 secs ( DONE at 2500.00 )

[ time 2500 ] Run job 2 for 2000.00 secs ( DONE at 4500.00 )

Final statistics:

Job 0 -- Response: 0.00 Turnaround 1000.00 Wait 0.00

Job 1 -- Response: 1000.00 Turnaround 2500.00 Wait 1000.00

Job 2 -- Response: 2500.00 Turnaround 4500.00 Wait 2500.00

Average -- Response: 1166.67 Turnaround 2666.67 Wait 1166.67

1. 随着量子长度的增加，RR的相应时间也会增加。若量子长度小于任务的完成时间，则RR的相应时间为线性增加。

设量子长度为M，则相应时间公式：

1. 第八章
2. 指令为：mlfq.py -j 2 -M 0 -n 2 -c -m 20，运行结果见下列代码：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -j 2 -M 0 -n 2 -c -m 20

Here is the list of inputs:

OPTIONS jobs 2

OPTIONS queues 2

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO False

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 17 - ioFreq 0

Job 1: startTime 0 - runTime 8 - ioFreq 0

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] JOB BEGINS by JOB 1

[ time 0 ] Run JOB 0 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 16 (of 17) ]

[ time 1 ] Run JOB 0 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 15 (of 17) ]

[ time 2 ] Run JOB 0 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 14 (of 17) ]

[ time 3 ] Run JOB 0 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 13 (of 17) ]

[ time 4 ] Run JOB 0 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 12 (of 17) ]

[ time 5 ] Run JOB 0 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 11 (of 17) ]

[ time 6 ] Run JOB 0 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 10 (of 17) ]

[ time 7 ] Run JOB 0 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 9 (of 17) ]

[ time 8 ] Run JOB 0 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 8 (of 17) ]

[ time 9 ] Run JOB 0 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 7 (of 17) ]

[ time 10 ] Run JOB 1 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 7 (of 8) ]

[ time 11 ] Run JOB 1 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 6 (of 8) ]

[ time 12 ] Run JOB 1 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 5 (of 8) ]

[ time 13 ] Run JOB 1 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 4 (of 8) ]

[ time 14 ] Run JOB 1 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 3 (of 8) ]

[ time 15 ] Run JOB 1 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 2 (of 8) ]

[ time 16 ] Run JOB 1 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 1 (of 8) ]

[ time 17 ] Run JOB 1 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 0 (of 8) ]

[ time 18 ] FINISHED JOB 1

[ time 18 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 6 (of 17) ]

[ time 19 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 5 (of 17) ]

[ time 20 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 4 (of 17) ]

[ time 21 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 3 (of 17) ]

[ time 22 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 2 (of 17) ]

[ time 23 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 1 (of 17) ]

[ time 24 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 0 (of 17) ]

[ time 25 ] FINISHED JOB 0

Final statistics:

Job 0: startTime 0 - response 0 - turnaround 25

Job 1: startTime 0 - response 10 - turnaround 18

Avg 1: startTime n/a - response 5.00 - turnaround 21.50

1. 实例1：指令为：mlfq.py -j 1 -l 0,50,0 -M 0 -n 3 -c -m 20，(50-200均为优先度0，为节省空间故时间长度设为50) ，运行结果见下列代码：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -j 1 -l 0,50,0 -M 0 -n 3 -c -m 20

Here is the list of inputs:

OPTIONS jobs 1

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 10

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO False

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 50 - ioFreq 0

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 49 (of 50) ]

[ time 1 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 48 (of 50) ]

[ time 2 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 47 (of 50) ]

[ time 3 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 46 (of 50) ]

[ time 4 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 45 (of 50) ]

[ time 5 ] Run JOB 0 at PRIORITY 2 [ TICKS 4 ALLOT 1 TIME 44 (of 50) ]

[ time 6 ] Run JOB 0 at PRIORITY 2 [ TICKS 3 ALLOT 1 TIME 43 (of 50) ]

[ time 7 ] Run JOB 0 at PRIORITY 2 [ TICKS 2 ALLOT 1 TIME 42 (of 50) ]

[ time 8 ] Run JOB 0 at PRIORITY 2 [ TICKS 1 ALLOT 1 TIME 41 (of 50) ]

[ time 9 ] Run JOB 0 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 40 (of 50) ]

[ time 10 ] Run JOB 0 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 39 (of 50) ]

[ time 11 ] Run JOB 0 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 38 (of 50) ]

[ time 12 ] Run JOB 0 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 37 (of 50) ]

[ time 13 ] Run JOB 0 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 36 (of 50) ]

[ time 14 ] Run JOB 0 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 35 (of 50) ]

[ time 15 ] Run JOB 0 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 34 (of 50) ]

[ time 16 ] Run JOB 0 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 33 (of 50) ]

[ time 17 ] Run JOB 0 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 32 (of 50) ]

[ time 18 ] Run JOB 0 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 31 (of 50) ]

[ time 19 ] Run JOB 0 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 30 (of 50) ]

[ time 20 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 29 (of 50) ]

[ time 21 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 28 (of 50) ]

[ time 22 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 27 (of 50) ]

[ time 23 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 26 (of 50) ]

[ time 24 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 25 (of 50) ]

[ time 25 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 24 (of 50) ]

[ time 26 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 23 (of 50) ]

[ time 27 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 22 (of 50) ]

[ time 28 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 21 (of 50) ]

[ time 29 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 20 (of 50) ]

[ time 30 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 19 (of 50) ]

[ time 31 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 18 (of 50) ]

[ time 32 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 17 (of 50) ]

[ time 33 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 16 (of 50) ]

[ time 34 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 15 (of 50) ]

[ time 35 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 14 (of 50) ]

[ time 36 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 13 (of 50) ]

[ time 37 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 12 (of 50) ]

[ time 38 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 11 (of 50) ]

[ time 39 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 10 (of 50) ]

[ time 40 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 9 (of 50) ]

[ time 41 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 8 (of 50) ]

[ time 42 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 7 (of 50) ]

[ time 43 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 6 (of 50) ]

[ time 44 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 5 (of 50) ]

[ time 45 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 4 (of 50) ]

[ time 46 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 3 (of 50) ]

[ time 47 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 2 (of 50) ]

[ time 48 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 1 (of 50) ]

[ time 49 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 0 (of 50) ]

[ time 50 ] FINISHED JOB 0

Final statistics:

Job 0: startTime 0 - response 0 - turnaround 50

Avg 0: startTime n/a - response 0.00 - turnaround 50.00

实例2：指令为：mlfq.py -j 2 -l 0,200,0:100,20,0 -q 10 -c，运行结果见下列代码：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -j 2 -l 0,200,0:100,20,0 -q 10 -c

Here is the list of inputs:

OPTIONS jobs 2

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 10

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO False

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 200 - ioFreq 0

Job 1: startTime 100 - runTime 20 - ioFreq 0

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 199 (of 200) ]

[ time 1 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 198 (of 200) ]

[ time 2 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 197 (of 200) ]

[ time 3 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 196 (of 200) ]

[ time 4 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 195 (of 200) ]

[ time 5 ] Run JOB 0 at PRIORITY 2 [ TICKS 4 ALLOT 1 TIME 194 (of 200) ]

[ time 6 ] Run JOB 0 at PRIORITY 2 [ TICKS 3 ALLOT 1 TIME 193 (of 200) ]

[ time 7 ] Run JOB 0 at PRIORITY 2 [ TICKS 2 ALLOT 1 TIME 192 (of 200) ]

[ time 8 ] Run JOB 0 at PRIORITY 2 [ TICKS 1 ALLOT 1 TIME 191 (of 200) ]

[ time 9 ] Run JOB 0 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 190 (of 200) ]

[ time 10 ] Run JOB 0 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 189 (of 200) ]

[ time 11 ] Run JOB 0 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 188 (of 200) ]

[ time 12 ] Run JOB 0 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 187 (of 200) ]

[ time 13 ] Run JOB 0 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 186 (of 200) ]

[ time 14 ] Run JOB 0 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 185 (of 200) ]

[ time 15 ] Run JOB 0 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 184 (of 200) ]

[ time 16 ] Run JOB 0 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 183 (of 200) ]

[ time 17 ] Run JOB 0 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 182 (of 200) ]

[ time 18 ] Run JOB 0 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 181 (of 200) ]

[ time 19 ] Run JOB 0 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 180 (of 200) ]

[ time 20 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 179 (of 200) ]

[ time 21 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 178 (of 200) ]

[ time 22 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 177 (of 200) ]

[ time 23 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 176 (of 200) ]

[ time 24 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 175 (of 200) ]

[ time 25 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 174 (of 200) ]

[ time 26 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 173 (of 200) ]

[ time 27 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 172 (of 200) ]

[ time 28 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 171 (of 200) ]

[ time 29 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 170 (of 200) ]

[ time 30 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 169 (of 200) ]

[ time 31 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 168 (of 200) ]

[ time 32 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 167 (of 200) ]

[ time 33 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 166 (of 200) ]

[ time 34 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 165 (of 200) ]

[ time 35 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 164 (of 200) ]

[ time 36 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 163 (of 200) ]

[ time 37 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 162 (of 200) ]

[ time 38 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 161 (of 200) ]

[ time 39 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 160 (of 200) ]

[ time 40 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 159 (of 200) ]

[ time 41 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 158 (of 200) ]

[ time 42 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 157 (of 200) ]

[ time 43 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 156 (of 200) ]

[ time 44 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 155 (of 200) ]

[ time 45 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 154 (of 200) ]

[ time 46 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 153 (of 200) ]

[ time 47 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 152 (of 200) ]

[ time 48 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 151 (of 200) ]

[ time 49 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 150 (of 200) ]

[ time 50 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 149 (of 200) ]

[ time 51 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 148 (of 200) ]

[ time 52 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 147 (of 200) ]

[ time 53 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 146 (of 200) ]

[ time 54 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 145 (of 200) ]

[ time 55 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 144 (of 200) ]

[ time 56 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 143 (of 200) ]

[ time 57 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 142 (of 200) ]

[ time 58 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 141 (of 200) ]

[ time 59 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 140 (of 200) ]

[ time 60 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 139 (of 200) ]

[ time 61 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 138 (of 200) ]

[ time 62 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 137 (of 200) ]

[ time 63 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 136 (of 200) ]

[ time 64 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 135 (of 200) ]

[ time 65 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 134 (of 200) ]

[ time 66 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 133 (of 200) ]

[ time 67 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 132 (of 200) ]

[ time 68 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 131 (of 200) ]

[ time 69 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 130 (of 200) ]

[ time 70 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 129 (of 200) ]

[ time 71 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 128 (of 200) ]

[ time 72 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 127 (of 200) ]

[ time 73 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 126 (of 200) ]

[ time 74 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 125 (of 200) ]

[ time 75 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 124 (of 200) ]

[ time 76 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 123 (of 200) ]

[ time 77 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 122 (of 200) ]

[ time 78 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 121 (of 200) ]

[ time 79 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 120 (of 200) ]

[ time 80 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 119 (of 200) ]

[ time 81 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 118 (of 200) ]

[ time 82 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 117 (of 200) ]

[ time 83 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 116 (of 200) ]

[ time 84 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 115 (of 200) ]

[ time 85 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 114 (of 200) ]

[ time 86 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 113 (of 200) ]

[ time 87 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 112 (of 200) ]

[ time 88 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 111 (of 200) ]

[ time 89 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 110 (of 200) ]

[ time 90 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 109 (of 200) ]

[ time 91 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 108 (of 200) ]

[ time 92 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 107 (of 200) ]

[ time 93 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 106 (of 200) ]

[ time 94 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 105 (of 200) ]

[ time 95 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 104 (of 200) ]

[ time 96 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 103 (of 200) ]

[ time 97 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 102 (of 200) ]

[ time 98 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 101 (of 200) ]

[ time 99 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 100 (of 200) ]

[ time 100 ] JOB BEGINS by JOB 1

[ time 100 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 19 (of 20) ]

[ time 101 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 18 (of 20) ]

[ time 102 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 17 (of 20) ]

[ time 103 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 16 (of 20) ]

[ time 104 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 15 (of 20) ]

[ time 105 ] Run JOB 1 at PRIORITY 2 [ TICKS 4 ALLOT 1 TIME 14 (of 20) ]

[ time 106 ] Run JOB 1 at PRIORITY 2 [ TICKS 3 ALLOT 1 TIME 13 (of 20) ]

[ time 107 ] Run JOB 1 at PRIORITY 2 [ TICKS 2 ALLOT 1 TIME 12 (of 20) ]

[ time 108 ] Run JOB 1 at PRIORITY 2 [ TICKS 1 ALLOT 1 TIME 11 (of 20) ]

[ time 109 ] Run JOB 1 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 10 (of 20) ]

[ time 110 ] Run JOB 1 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 9 (of 20) ]

[ time 111 ] Run JOB 1 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 8 (of 20) ]

[ time 112 ] Run JOB 1 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 7 (of 20) ]

[ time 113 ] Run JOB 1 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 6 (of 20) ]

[ time 114 ] Run JOB 1 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 5 (of 20) ]

[ time 115 ] Run JOB 1 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 4 (of 20) ]

[ time 116 ] Run JOB 1 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 3 (of 20) ]

[ time 117 ] Run JOB 1 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 2 (of 20) ]

[ time 118 ] Run JOB 1 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 1 (of 20) ]

[ time 119 ] Run JOB 1 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 0 (of 20) ]

[ time 120 ] FINISHED JOB 1

[ time 120 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 99 (of 200) ]

[ time 121 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 98 (of 200) ]

[ time 122 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 97 (of 200) ]

[ time 123 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 96 (of 200) ]

[ time 124 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 95 (of 200) ]

[ time 125 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 94 (of 200) ]

[ time 126 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 93 (of 200) ]

[ time 127 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 92 (of 200) ]

[ time 128 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 91 (of 200) ]

[ time 129 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 90 (of 200) ]

[ time 130 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 89 (of 200) ]

[ time 131 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 88 (of 200) ]

[ time 132 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 87 (of 200) ]

[ time 133 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 86 (of 200) ]

[ time 134 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 85 (of 200) ]

[ time 135 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 84 (of 200) ]

[ time 136 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 83 (of 200) ]

[ time 137 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 82 (of 200) ]

[ time 138 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 81 (of 200) ]

[ time 139 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 80 (of 200) ]

[ time 140 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 79 (of 200) ]

[ time 141 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 78 (of 200) ]

[ time 142 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 77 (of 200) ]

[ time 143 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 76 (of 200) ]

[ time 144 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 75 (of 200) ]

[ time 145 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 74 (of 200) ]

[ time 146 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 73 (of 200) ]

[ time 147 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 72 (of 200) ]

[ time 148 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 71 (of 200) ]

[ time 149 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 70 (of 200) ]

[ time 150 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 69 (of 200) ]

[ time 151 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 68 (of 200) ]

[ time 152 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 67 (of 200) ]

[ time 153 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 66 (of 200) ]

[ time 154 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 65 (of 200) ]

[ time 155 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 64 (of 200) ]

[ time 156 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 63 (of 200) ]

[ time 157 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 62 (of 200) ]

[ time 158 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 61 (of 200) ]

[ time 159 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 60 (of 200) ]

[ time 160 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 59 (of 200) ]

[ time 161 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 58 (of 200) ]

[ time 162 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 57 (of 200) ]

[ time 163 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 56 (of 200) ]

[ time 164 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 55 (of 200) ]

[ time 165 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 54 (of 200) ]

[ time 166 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 53 (of 200) ]

[ time 167 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 52 (of 200) ]

[ time 168 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 51 (of 200) ]

[ time 169 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 50 (of 200) ]

[ time 170 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 49 (of 200) ]

[ time 171 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 48 (of 200) ]

[ time 172 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 47 (of 200) ]

[ time 173 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 46 (of 200) ]

[ time 174 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 45 (of 200) ]

[ time 175 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 44 (of 200) ]

[ time 176 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 43 (of 200) ]

[ time 177 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 42 (of 200) ]

[ time 178 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 41 (of 200) ]

[ time 179 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 40 (of 200) ]

[ time 180 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 39 (of 200) ]

[ time 181 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 38 (of 200) ]

[ time 182 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 37 (of 200) ]

[ time 183 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 36 (of 200) ]

[ time 184 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 35 (of 200) ]

[ time 185 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 34 (of 200) ]

[ time 186 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 33 (of 200) ]

[ time 187 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 32 (of 200) ]

[ time 188 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 31 (of 200) ]

[ time 189 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 30 (of 200) ]

[ time 190 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 29 (of 200) ]

[ time 191 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 28 (of 200) ]

[ time 192 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 27 (of 200) ]

[ time 193 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 26 (of 200) ]

[ time 194 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 25 (of 200) ]

[ time 195 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 24 (of 200) ]

[ time 196 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 23 (of 200) ]

[ time 197 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 22 (of 200) ]

[ time 198 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 21 (of 200) ]

[ time 199 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 20 (of 200) ]

[ time 200 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 19 (of 200) ]

[ time 201 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 18 (of 200) ]

[ time 202 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 17 (of 200) ]

[ time 203 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 16 (of 200) ]

[ time 204 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 15 (of 200) ]

[ time 205 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 14 (of 200) ]

[ time 206 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 13 (of 200) ]

[ time 207 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 12 (of 200) ]

[ time 208 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 11 (of 200) ]

[ time 209 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 10 (of 200) ]

[ time 210 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 9 (of 200) ]

[ time 211 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 8 (of 200) ]

[ time 212 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 7 (of 200) ]

[ time 213 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 6 (of 200) ]

[ time 214 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 5 (of 200) ]

[ time 215 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 4 (of 200) ]

[ time 216 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 3 (of 200) ]

[ time 217 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 2 (of 200) ]

[ time 218 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 1 (of 200) ]

[ time 219 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 0 (of 200) ]

[ time 220 ] FINISHED JOB 0

Final statistics:

Job 0: startTime 0 - response 0 - turnaround 220

Job 1: startTime 100 - response 0 - turnaround 20

Avg 1: startTime n/a - response 0.00 - turnaround 120.00

实例3：指令为：mlfq.py -j 2 -l 0,180,0:0,20,1 -q 10 -c，运行结果见下列代码：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -j 2 -l 0,200,0:0,20,1 -q 10 -c

Here is the list of inputs:

OPTIONS jobs 2

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 10

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO False

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 200 - ioFreq 0

Job 1: startTime 0 - runTime 20 - ioFreq 1

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] JOB BEGINS by JOB 1

[ time 0 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 199 (of 200) ]

[ time 1 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 198 (of 200) ]

[ time 2 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 197 (of 200) ]

[ time 3 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 196 (of 200) ]

[ time 4 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 195 (of 200) ]

[ time 5 ] Run JOB 0 at PRIORITY 2 [ TICKS 4 ALLOT 1 TIME 194 (of 200) ]

[ time 6 ] Run JOB 0 at PRIORITY 2 [ TICKS 3 ALLOT 1 TIME 193 (of 200) ]

[ time 7 ] Run JOB 0 at PRIORITY 2 [ TICKS 2 ALLOT 1 TIME 192 (of 200) ]

[ time 8 ] Run JOB 0 at PRIORITY 2 [ TICKS 1 ALLOT 1 TIME 191 (of 200) ]

[ time 9 ] Run JOB 0 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 190 (of 200) ]

[ time 10 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 19 (of 20) ]

[ time 11 ] IO\_START by JOB 1

IO DONE

[ time 11 ] Run JOB 0 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 189 (of 200) ]

[ time 12 ] Run JOB 0 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 188 (of 200) ]

[ time 13 ] Run JOB 0 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 187 (of 200) ]

[ time 14 ] Run JOB 0 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 186 (of 200) ]

[ time 15 ] Run JOB 0 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 185 (of 200) ]

[ time 16 ] IO\_DONE by JOB 1

[ time 16 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 18 (of 20) ]

[ time 17 ] IO\_START by JOB 1

IO DONE

[ time 17 ] Run JOB 0 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 184 (of 200) ]

[ time 18 ] Run JOB 0 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 183 (of 200) ]

[ time 19 ] Run JOB 0 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 182 (of 200) ]

[ time 20 ] Run JOB 0 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 181 (of 200) ]

[ time 21 ] Run JOB 0 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 180 (of 200) ]

[ time 22 ] IO\_DONE by JOB 1

[ time 22 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 17 (of 20) ]

[ time 23 ] IO\_START by JOB 1

IO DONE

[ time 23 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 179 (of 200) ]

[ time 24 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 178 (of 200) ]

[ time 25 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 177 (of 200) ]

[ time 26 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 176 (of 200) ]

[ time 27 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 175 (of 200) ]

[ time 28 ] IO\_DONE by JOB 1

[ time 28 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 16 (of 20) ]

[ time 29 ] IO\_START by JOB 1

IO DONE

[ time 29 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 174 (of 200) ]

[ time 30 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 173 (of 200) ]

[ time 31 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 172 (of 200) ]

[ time 32 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 171 (of 200) ]

[ time 33 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 170 (of 200) ]

[ time 34 ] IO\_DONE by JOB 1

[ time 34 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 15 (of 20) ]

[ time 35 ] IO\_START by JOB 1

IO DONE

[ time 35 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 169 (of 200) ]

[ time 36 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 168 (of 200) ]

[ time 37 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 167 (of 200) ]

[ time 38 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 166 (of 200) ]

[ time 39 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 165 (of 200) ]

[ time 40 ] IO\_DONE by JOB 1

[ time 40 ] Run JOB 1 at PRIORITY 2 [ TICKS 4 ALLOT 1 TIME 14 (of 20) ]

[ time 41 ] IO\_START by JOB 1

IO DONE

[ time 41 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 164 (of 200) ]

[ time 42 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 163 (of 200) ]

[ time 43 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 162 (of 200) ]

[ time 44 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 161 (of 200) ]

[ time 45 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 160 (of 200) ]

[ time 46 ] IO\_DONE by JOB 1

[ time 46 ] Run JOB 1 at PRIORITY 2 [ TICKS 3 ALLOT 1 TIME 13 (of 20) ]

[ time 47 ] IO\_START by JOB 1

IO DONE

[ time 47 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 159 (of 200) ]

[ time 48 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 158 (of 200) ]

[ time 49 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 157 (of 200) ]

[ time 50 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 156 (of 200) ]

[ time 51 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 155 (of 200) ]

[ time 52 ] IO\_DONE by JOB 1

[ time 52 ] Run JOB 1 at PRIORITY 2 [ TICKS 2 ALLOT 1 TIME 12 (of 20) ]

[ time 53 ] IO\_START by JOB 1

IO DONE

[ time 53 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 154 (of 200) ]

[ time 54 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 153 (of 200) ]

[ time 55 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 152 (of 200) ]

[ time 56 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 151 (of 200) ]

[ time 57 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 150 (of 200) ]

[ time 58 ] IO\_DONE by JOB 1

[ time 58 ] Run JOB 1 at PRIORITY 2 [ TICKS 1 ALLOT 1 TIME 11 (of 20) ]

[ time 59 ] IO\_START by JOB 1

IO DONE

[ time 59 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 149 (of 200) ]

[ time 60 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 148 (of 200) ]

[ time 61 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 147 (of 200) ]

[ time 62 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 146 (of 200) ]

[ time 63 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 145 (of 200) ]

[ time 64 ] IO\_DONE by JOB 1

[ time 64 ] Run JOB 1 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 10 (of 20) ]

[ time 65 ] IO\_START by JOB 1

IO DONE

[ time 65 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 144 (of 200) ]

[ time 66 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 143 (of 200) ]

[ time 67 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 142 (of 200) ]

[ time 68 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 141 (of 200) ]

[ time 69 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 140 (of 200) ]

[ time 70 ] IO\_DONE by JOB 1

[ time 70 ] Run JOB 1 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 9 (of 20) ]

[ time 71 ] IO\_START by JOB 1

IO DONE

[ time 71 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 139 (of 200) ]

[ time 72 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 138 (of 200) ]

[ time 73 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 137 (of 200) ]

[ time 74 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 136 (of 200) ]

[ time 75 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 135 (of 200) ]

[ time 76 ] IO\_DONE by JOB 1

[ time 76 ] Run JOB 1 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 8 (of 20) ]

[ time 77 ] IO\_START by JOB 1

IO DONE

[ time 77 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 134 (of 200) ]

[ time 78 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 133 (of 200) ]

[ time 79 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 132 (of 200) ]

[ time 80 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 131 (of 200) ]

[ time 81 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 130 (of 200) ]

[ time 82 ] IO\_DONE by JOB 1

[ time 82 ] Run JOB 1 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 7 (of 20) ]

[ time 83 ] IO\_START by JOB 1

IO DONE

[ time 83 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 129 (of 200) ]

[ time 84 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 128 (of 200) ]

[ time 85 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 127 (of 200) ]

[ time 86 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 126 (of 200) ]

[ time 87 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 125 (of 200) ]

[ time 88 ] IO\_DONE by JOB 1

[ time 88 ] Run JOB 1 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 6 (of 20) ]

[ time 89 ] IO\_START by JOB 1

IO DONE

[ time 89 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 124 (of 200) ]

[ time 90 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 123 (of 200) ]

[ time 91 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 122 (of 200) ]

[ time 92 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 121 (of 200) ]

[ time 93 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 120 (of 200) ]

[ time 94 ] IO\_DONE by JOB 1

[ time 94 ] Run JOB 1 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 5 (of 20) ]

[ time 95 ] IO\_START by JOB 1

IO DONE

[ time 95 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 119 (of 200) ]

[ time 96 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 118 (of 200) ]

[ time 97 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 117 (of 200) ]

[ time 98 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 116 (of 200) ]

[ time 99 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 115 (of 200) ]

[ time 100 ] IO\_DONE by JOB 1

[ time 100 ] Run JOB 1 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 4 (of 20) ]

[ time 101 ] IO\_START by JOB 1

IO DONE

[ time 101 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 114 (of 200) ]

[ time 102 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 113 (of 200) ]

[ time 103 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 112 (of 200) ]

[ time 104 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 111 (of 200) ]

[ time 105 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 110 (of 200) ]

[ time 106 ] IO\_DONE by JOB 1

[ time 106 ] Run JOB 1 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 3 (of 20) ]

[ time 107 ] IO\_START by JOB 1

IO DONE

[ time 107 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 109 (of 200) ]

[ time 108 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 108 (of 200) ]

[ time 109 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 107 (of 200) ]

[ time 110 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 106 (of 200) ]

[ time 111 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 105 (of 200) ]

[ time 112 ] IO\_DONE by JOB 1

[ time 112 ] Run JOB 1 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 2 (of 20) ]

[ time 113 ] IO\_START by JOB 1

IO DONE

[ time 113 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 104 (of 200) ]

[ time 114 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 103 (of 200) ]

[ time 115 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 102 (of 200) ]

[ time 116 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 101 (of 200) ]

[ time 117 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 100 (of 200) ]

[ time 118 ] IO\_DONE by JOB 1

[ time 118 ] Run JOB 1 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 1 (of 20) ]

[ time 119 ] IO\_START by JOB 1

IO DONE

[ time 119 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 99 (of 200) ]

[ time 120 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 98 (of 200) ]

[ time 121 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 97 (of 200) ]

[ time 122 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 96 (of 200) ]

[ time 123 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 95 (of 200) ]

[ time 124 ] IO\_DONE by JOB 1

[ time 124 ] Run JOB 1 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 0 (of 20) ]

[ time 125 ] FINISHED JOB 1

[ time 125 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 94 (of 200) ]

[ time 126 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 93 (of 200) ]

[ time 127 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 92 (of 200) ]

[ time 128 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 91 (of 200) ]

[ time 129 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 90 (of 200) ]

[ time 130 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 89 (of 200) ]

[ time 131 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 88 (of 200) ]

[ time 132 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 87 (of 200) ]

[ time 133 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 86 (of 200) ]

[ time 134 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 85 (of 200) ]

[ time 135 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 84 (of 200) ]

[ time 136 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 83 (of 200) ]

[ time 137 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 82 (of 200) ]

[ time 138 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 81 (of 200) ]

[ time 139 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 80 (of 200) ]

[ time 140 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 79 (of 200) ]

[ time 141 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 78 (of 200) ]

[ time 142 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 77 (of 200) ]

[ time 143 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 76 (of 200) ]

[ time 144 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 75 (of 200) ]

[ time 145 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 74 (of 200) ]

[ time 146 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 73 (of 200) ]

[ time 147 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 72 (of 200) ]

[ time 148 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 71 (of 200) ]

[ time 149 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 70 (of 200) ]

[ time 150 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 69 (of 200) ]

[ time 151 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 68 (of 200) ]

[ time 152 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 67 (of 200) ]

[ time 153 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 66 (of 200) ]

[ time 154 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 65 (of 200) ]

[ time 155 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 64 (of 200) ]

[ time 156 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 63 (of 200) ]

[ time 157 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 62 (of 200) ]

[ time 158 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 61 (of 200) ]

[ time 159 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 60 (of 200) ]

[ time 160 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 59 (of 200) ]

[ time 161 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 58 (of 200) ]

[ time 162 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 57 (of 200) ]

[ time 163 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 56 (of 200) ]

[ time 164 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 55 (of 200) ]

[ time 165 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 54 (of 200) ]

[ time 166 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 53 (of 200) ]

[ time 167 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 52 (of 200) ]

[ time 168 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 51 (of 200) ]

[ time 169 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 50 (of 200) ]

[ time 170 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 49 (of 200) ]

[ time 171 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 48 (of 200) ]

[ time 172 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 47 (of 200) ]

[ time 173 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 46 (of 200) ]

[ time 174 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 45 (of 200) ]

[ time 175 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 44 (of 200) ]

[ time 176 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 43 (of 200) ]

[ time 177 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 42 (of 200) ]

[ time 178 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 41 (of 200) ]

[ time 179 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 40 (of 200) ]

[ time 180 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 39 (of 200) ]

[ time 181 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 38 (of 200) ]

[ time 182 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 37 (of 200) ]

[ time 183 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 36 (of 200) ]

[ time 184 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 35 (of 200) ]

[ time 185 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 34 (of 200) ]

[ time 186 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 33 (of 200) ]

[ time 187 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 32 (of 200) ]

[ time 188 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 31 (of 200) ]

[ time 189 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 30 (of 200) ]

[ time 190 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 29 (of 200) ]

[ time 191 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 28 (of 200) ]

[ time 192 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 27 (of 200) ]

[ time 193 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 26 (of 200) ]

[ time 194 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 25 (of 200) ]

[ time 195 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 24 (of 200) ]

[ time 196 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 23 (of 200) ]

[ time 197 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 22 (of 200) ]

[ time 198 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 21 (of 200) ]

[ time 199 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 20 (of 200) ]

[ time 200 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 19 (of 200) ]

[ time 201 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 18 (of 200) ]

[ time 202 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 17 (of 200) ]

[ time 203 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 16 (of 200) ]

[ time 204 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 15 (of 200) ]

[ time 205 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 14 (of 200) ]

[ time 206 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 13 (of 200) ]

[ time 207 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 12 (of 200) ]

[ time 208 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 11 (of 200) ]

[ time 209 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 10 (of 200) ]

[ time 210 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 9 (of 200) ]

[ time 211 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 8 (of 200) ]

[ time 212 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 7 (of 200) ]

[ time 213 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 6 (of 200) ]

[ time 214 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 5 (of 200) ]

[ time 215 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 4 (of 200) ]

[ time 216 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 3 (of 200) ]

[ time 217 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 2 (of 200) ]

[ time 218 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 1 (of 200) ]

[ time 219 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 0 (of 200) ]

[ time 220 ] FINISHED JOB 0

Final statistics:

Job 0: startTime 0 - response 0 - turnaround 220

Job 1: startTime 0 - response 10 - turnaround 125

Avg 1: startTime n/a - response 5.00 - turnaround 172.50

由于篇幅原因，尝试2与尝试3金列出前后指令并附以解释（两百多行实在有点长）

尝试2（改进前）：mlfq.py -l 0,150,0:100,50,5:100,50,5 -q 10 -n 3 -i 5 -S -c

尝试2（改进后）：mlfq.py -l 0,150,0:100,50,5:100,50,5 -q 10 -n 3 -i 5 -S -B 50 -c

-B 50指每隔50个时间单位将所有任务提至最高优先级

尝试3（改进前）：mlfq.py -l 0,200,0:30,200,9 -q 10 -n 3 -i 1 -S -c

尝试3（改进后）：mlfq.py -l 0,200,0:30,200,9 -q 10 -n 3 -i 1-c

去除- S 即不再允许程序在调用io后能够继续呆在原优先级（高优先级时间配额固定为10）

1. 将全部任务认为只有一个优先级，即队列个数设置为1。

示例指令：mlfq.py -n 1 -j 2 -l 0,20,0:0,20,0 -q 1 -c，运行结果见下列代码：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -n 1 -j 2 -l 0,20,0:0,20,0 -q 1 -c

Here is the list of inputs:

OPTIONS jobs 2

OPTIONS queues 1

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 1

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO False

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 20 - ioFreq 0

Job 1: startTime 0 - runTime 20 - ioFreq 0

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] JOB BEGINS by JOB 1

[ time 0 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 19 (of 20) ]

[ time 1 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 19 (of 20) ]

[ time 2 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 18 (of 20) ]

[ time 3 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 18 (of 20) ]

[ time 4 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 17 (of 20) ]

[ time 5 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 17 (of 20) ]

[ time 6 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 16 (of 20) ]

[ time 7 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 16 (of 20) ]

[ time 8 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 15 (of 20) ]

[ time 9 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 15 (of 20) ]

[ time 10 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 14 (of 20) ]

[ time 11 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 14 (of 20) ]

[ time 12 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 13 (of 20) ]

[ time 13 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 13 (of 20) ]

[ time 14 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 12 (of 20) ]

[ time 15 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 12 (of 20) ]

[ time 16 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 11 (of 20) ]

[ time 17 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 11 (of 20) ]

[ time 18 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 10 (of 20) ]

[ time 19 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 10 (of 20) ]

[ time 20 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 9 (of 20) ]

[ time 21 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 9 (of 20) ]

[ time 22 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 8 (of 20) ]

[ time 23 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 8 (of 20) ]

[ time 24 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 7 (of 20) ]

[ time 25 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 7 (of 20) ]

[ time 26 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 6 (of 20) ]

[ time 27 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 6 (of 20) ]

[ time 28 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 5 (of 20) ]

[ time 29 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 5 (of 20) ]

[ time 30 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 4 (of 20) ]

[ time 31 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 4 (of 20) ]

[ time 32 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 3 (of 20) ]

[ time 33 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 3 (of 20) ]

[ time 34 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 2 (of 20) ]

[ time 35 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 2 (of 20) ]

[ time 36 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 1 (of 20) ]

[ time 37 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 1 (of 20) ]

[ time 38 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 0 (of 20) ]

[ time 39 ] FINISHED JOB 0

[ time 39 ] Run JOB 1 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 0 (of 20) ]

[ time 40 ] FINISHED JOB 1

Final statistics:

Job 0: startTime 0 - response 0 - turnaround 39

Job 1: startTime 0 - response 1 - turnaround 40

Avg 1: startTime n/a - response 0.50 - turnaround 39.50

1. 在使用较老的优先级规则上将后进入的任务io申请间隔与io所花时间比例设置为99：1即可。

示例指令：mlfq.py -l 0,1000,0:300,1000,99 -q 100 -n 3 -i 1 -S -c，运行结果见下列代码：

（中间代码仅截取过程中99：1的部分）

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -l 0,1000,0:300,1000,99 -q 100 -n 3 -i 1 -S -c

Here is the list of inputs:

OPTIONS jobs 2

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 100

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 100

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 100

OPTIONS boost 0

OPTIONS ioTime 1

OPTIONS stayAfterIO True

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 1000 - ioFreq 0

Job 1: startTime 300 - runTime 1000 - ioFreq 99

[ time 300 ] JOB BEGINS by JOB 1

[ time 300 ] Run JOB 1 at PRIORITY 2 [ TICKS 99 ALLOT 1 TIME 999 (of 1000) ]

[ time 301 ] Run JOB 1 at PRIORITY 2 [ TICKS 98 ALLOT 1 TIME 998 (of 1000) ]

[ time 302 ] Run JOB 1 at PRIORITY 2 [ TICKS 97 ALLOT 1 TIME 997 (of 1000) ]

[ time 303 ] Run JOB 1 at PRIORITY 2 [ TICKS 96 ALLOT 1 TIME 996 (of 1000) ]

[ time 304 ] Run JOB 1 at PRIORITY 2 [ TICKS 95 ALLOT 1 TIME 995 (of 1000) ]

[ time 305 ] Run JOB 1 at PRIORITY 2 [ TICKS 94 ALLOT 1 TIME 994 (of 1000) ]

[ time 306 ] Run JOB 1 at PRIORITY 2 [ TICKS 93 ALLOT 1 TIME 993 (of 1000) ]

[ time 307 ] Run JOB 1 at PRIORITY 2 [ TICKS 92 ALLOT 1 TIME 992 (of 1000) ]

[ time 308 ] Run JOB 1 at PRIORITY 2 [ TICKS 91 ALLOT 1 TIME 991 (of 1000) ]

[ time 309 ] Run JOB 1 at PRIORITY 2 [ TICKS 90 ALLOT 1 TIME 990 (of 1000) ]

[ time 310 ] Run JOB 1 at PRIORITY 2 [ TICKS 89 ALLOT 1 TIME 989 (of 1000) ]

[ time 311 ] Run JOB 1 at PRIORITY 2 [ TICKS 88 ALLOT 1 TIME 988 (of 1000) ]

[ time 312 ] Run JOB 1 at PRIORITY 2 [ TICKS 87 ALLOT 1 TIME 987 (of 1000) ]

[ time 313 ] Run JOB 1 at PRIORITY 2 [ TICKS 86 ALLOT 1 TIME 986 (of 1000) ]

[ time 314 ] Run JOB 1 at PRIORITY 2 [ TICKS 85 ALLOT 1 TIME 985 (of 1000) ]

[ time 315 ] Run JOB 1 at PRIORITY 2 [ TICKS 84 ALLOT 1 TIME 984 (of 1000) ]

[ time 316 ] Run JOB 1 at PRIORITY 2 [ TICKS 83 ALLOT 1 TIME 983 (of 1000) ]

[ time 317 ] Run JOB 1 at PRIORITY 2 [ TICKS 82 ALLOT 1 TIME 982 (of 1000) ]

[ time 318 ] Run JOB 1 at PRIORITY 2 [ TICKS 81 ALLOT 1 TIME 981 (of 1000) ]

[ time 319 ] Run JOB 1 at PRIORITY 2 [ TICKS 80 ALLOT 1 TIME 980 (of 1000) ]

[ time 320 ] Run JOB 1 at PRIORITY 2 [ TICKS 79 ALLOT 1 TIME 979 (of 1000) ]

[ time 321 ] Run JOB 1 at PRIORITY 2 [ TICKS 78 ALLOT 1 TIME 978 (of 1000) ]

[ time 322 ] Run JOB 1 at PRIORITY 2 [ TICKS 77 ALLOT 1 TIME 977 (of 1000) ]

[ time 323 ] Run JOB 1 at PRIORITY 2 [ TICKS 76 ALLOT 1 TIME 976 (of 1000) ]

[ time 324 ] Run JOB 1 at PRIORITY 2 [ TICKS 75 ALLOT 1 TIME 975 (of 1000) ]

[ time 325 ] Run JOB 1 at PRIORITY 2 [ TICKS 74 ALLOT 1 TIME 974 (of 1000) ]

[ time 326 ] Run JOB 1 at PRIORITY 2 [ TICKS 73 ALLOT 1 TIME 973 (of 1000) ]

[ time 327 ] Run JOB 1 at PRIORITY 2 [ TICKS 72 ALLOT 1 TIME 972 (of 1000) ]

[ time 328 ] Run JOB 1 at PRIORITY 2 [ TICKS 71 ALLOT 1 TIME 971 (of 1000) ]

[ time 329 ] Run JOB 1 at PRIORITY 2 [ TICKS 70 ALLOT 1 TIME 970 (of 1000) ]

[ time 330 ] Run JOB 1 at PRIORITY 2 [ TICKS 69 ALLOT 1 TIME 969 (of 1000) ]

[ time 331 ] Run JOB 1 at PRIORITY 2 [ TICKS 68 ALLOT 1 TIME 968 (of 1000) ]

[ time 332 ] Run JOB 1 at PRIORITY 2 [ TICKS 67 ALLOT 1 TIME 967 (of 1000) ]

[ time 333 ] Run JOB 1 at PRIORITY 2 [ TICKS 66 ALLOT 1 TIME 966 (of 1000) ]

[ time 334 ] Run JOB 1 at PRIORITY 2 [ TICKS 65 ALLOT 1 TIME 965 (of 1000) ]

[ time 335 ] Run JOB 1 at PRIORITY 2 [ TICKS 64 ALLOT 1 TIME 964 (of 1000) ]

[ time 336 ] Run JOB 1 at PRIORITY 2 [ TICKS 63 ALLOT 1 TIME 963 (of 1000) ]

[ time 337 ] Run JOB 1 at PRIORITY 2 [ TICKS 62 ALLOT 1 TIME 962 (of 1000) ]

[ time 338 ] Run JOB 1 at PRIORITY 2 [ TICKS 61 ALLOT 1 TIME 961 (of 1000) ]

[ time 339 ] Run JOB 1 at PRIORITY 2 [ TICKS 60 ALLOT 1 TIME 960 (of 1000) ]

[ time 340 ] Run JOB 1 at PRIORITY 2 [ TICKS 59 ALLOT 1 TIME 959 (of 1000) ]

[ time 341 ] Run JOB 1 at PRIORITY 2 [ TICKS 58 ALLOT 1 TIME 958 (of 1000) ]

[ time 342 ] Run JOB 1 at PRIORITY 2 [ TICKS 57 ALLOT 1 TIME 957 (of 1000) ]

[ time 343 ] Run JOB 1 at PRIORITY 2 [ TICKS 56 ALLOT 1 TIME 956 (of 1000) ]

[ time 344 ] Run JOB 1 at PRIORITY 2 [ TICKS 55 ALLOT 1 TIME 955 (of 1000) ]

[ time 345 ] Run JOB 1 at PRIORITY 2 [ TICKS 54 ALLOT 1 TIME 954 (of 1000) ]

[ time 346 ] Run JOB 1 at PRIORITY 2 [ TICKS 53 ALLOT 1 TIME 953 (of 1000) ]

[ time 347 ] Run JOB 1 at PRIORITY 2 [ TICKS 52 ALLOT 1 TIME 952 (of 1000) ]

[ time 348 ] Run JOB 1 at PRIORITY 2 [ TICKS 51 ALLOT 1 TIME 951 (of 1000) ]

[ time 349 ] Run JOB 1 at PRIORITY 2 [ TICKS 50 ALLOT 1 TIME 950 (of 1000) ]

[ time 350 ] Run JOB 1 at PRIORITY 2 [ TICKS 49 ALLOT 1 TIME 949 (of 1000) ]

[ time 351 ] Run JOB 1 at PRIORITY 2 [ TICKS 48 ALLOT 1 TIME 948 (of 1000) ]

[ time 352 ] Run JOB 1 at PRIORITY 2 [ TICKS 47 ALLOT 1 TIME 947 (of 1000) ]

[ time 353 ] Run JOB 1 at PRIORITY 2 [ TICKS 46 ALLOT 1 TIME 946 (of 1000) ]

[ time 354 ] Run JOB 1 at PRIORITY 2 [ TICKS 45 ALLOT 1 TIME 945 (of 1000) ]

[ time 355 ] Run JOB 1 at PRIORITY 2 [ TICKS 44 ALLOT 1 TIME 944 (of 1000) ]

[ time 356 ] Run JOB 1 at PRIORITY 2 [ TICKS 43 ALLOT 1 TIME 943 (of 1000) ]

[ time 357 ] Run JOB 1 at PRIORITY 2 [ TICKS 42 ALLOT 1 TIME 942 (of 1000) ]

[ time 358 ] Run JOB 1 at PRIORITY 2 [ TICKS 41 ALLOT 1 TIME 941 (of 1000) ]

[ time 359 ] Run JOB 1 at PRIORITY 2 [ TICKS 40 ALLOT 1 TIME 940 (of 1000) ]

[ time 360 ] Run JOB 1 at PRIORITY 2 [ TICKS 39 ALLOT 1 TIME 939 (of 1000) ]

[ time 361 ] Run JOB 1 at PRIORITY 2 [ TICKS 38 ALLOT 1 TIME 938 (of 1000) ]

[ time 362 ] Run JOB 1 at PRIORITY 2 [ TICKS 37 ALLOT 1 TIME 937 (of 1000) ]

[ time 363 ] Run JOB 1 at PRIORITY 2 [ TICKS 36 ALLOT 1 TIME 936 (of 1000) ]

[ time 364 ] Run JOB 1 at PRIORITY 2 [ TICKS 35 ALLOT 1 TIME 935 (of 1000) ]

[ time 365 ] Run JOB 1 at PRIORITY 2 [ TICKS 34 ALLOT 1 TIME 934 (of 1000) ]

[ time 366 ] Run JOB 1 at PRIORITY 2 [ TICKS 33 ALLOT 1 TIME 933 (of 1000) ]

[ time 367 ] Run JOB 1 at PRIORITY 2 [ TICKS 32 ALLOT 1 TIME 932 (of 1000) ]

[ time 368 ] Run JOB 1 at PRIORITY 2 [ TICKS 31 ALLOT 1 TIME 931 (of 1000) ]

[ time 369 ] Run JOB 1 at PRIORITY 2 [ TICKS 30 ALLOT 1 TIME 930 (of 1000) ]

[ time 370 ] Run JOB 1 at PRIORITY 2 [ TICKS 29 ALLOT 1 TIME 929 (of 1000) ]

[ time 371 ] Run JOB 1 at PRIORITY 2 [ TICKS 28 ALLOT 1 TIME 928 (of 1000) ]

[ time 372 ] Run JOB 1 at PRIORITY 2 [ TICKS 27 ALLOT 1 TIME 927 (of 1000) ]

[ time 373 ] Run JOB 1 at PRIORITY 2 [ TICKS 26 ALLOT 1 TIME 926 (of 1000) ]

[ time 374 ] Run JOB 1 at PRIORITY 2 [ TICKS 25 ALLOT 1 TIME 925 (of 1000) ]

[ time 375 ] Run JOB 1 at PRIORITY 2 [ TICKS 24 ALLOT 1 TIME 924 (of 1000) ]

[ time 376 ] Run JOB 1 at PRIORITY 2 [ TICKS 23 ALLOT 1 TIME 923 (of 1000) ]

[ time 377 ] Run JOB 1 at PRIORITY 2 [ TICKS 22 ALLOT 1 TIME 922 (of 1000) ]

[ time 378 ] Run JOB 1 at PRIORITY 2 [ TICKS 21 ALLOT 1 TIME 921 (of 1000) ]

[ time 379 ] Run JOB 1 at PRIORITY 2 [ TICKS 20 ALLOT 1 TIME 920 (of 1000) ]

[ time 380 ] Run JOB 1 at PRIORITY 2 [ TICKS 19 ALLOT 1 TIME 919 (of 1000) ]

[ time 381 ] Run JOB 1 at PRIORITY 2 [ TICKS 18 ALLOT 1 TIME 918 (of 1000) ]

[ time 382 ] Run JOB 1 at PRIORITY 2 [ TICKS 17 ALLOT 1 TIME 917 (of 1000) ]

[ time 383 ] Run JOB 1 at PRIORITY 2 [ TICKS 16 ALLOT 1 TIME 916 (of 1000) ]

[ time 384 ] Run JOB 1 at PRIORITY 2 [ TICKS 15 ALLOT 1 TIME 915 (of 1000) ]

[ time 385 ] Run JOB 1 at PRIORITY 2 [ TICKS 14 ALLOT 1 TIME 914 (of 1000) ]

[ time 386 ] Run JOB 1 at PRIORITY 2 [ TICKS 13 ALLOT 1 TIME 913 (of 1000) ]

[ time 387 ] Run JOB 1 at PRIORITY 2 [ TICKS 12 ALLOT 1 TIME 912 (of 1000) ]

[ time 388 ] Run JOB 1 at PRIORITY 2 [ TICKS 11 ALLOT 1 TIME 911 (of 1000) ]

[ time 389 ] Run JOB 1 at PRIORITY 2 [ TICKS 10 ALLOT 1 TIME 910 (of 1000) ]

[ time 390 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 909 (of 1000) ]

[ time 391 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 908 (of 1000) ]

[ time 392 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 907 (of 1000) ]

[ time 393 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 906 (of 1000) ]

[ time 394 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 905 (of 1000) ]

[ time 395 ] Run JOB 1 at PRIORITY 2 [ TICKS 4 ALLOT 1 TIME 904 (of 1000) ]

[ time 396 ] Run JOB 1 at PRIORITY 2 [ TICKS 3 ALLOT 1 TIME 903 (of 1000) ]

[ time 397 ] Run JOB 1 at PRIORITY 2 [ TICKS 2 ALLOT 1 TIME 902 (of 1000) ]

[ time 398 ] Run JOB 1 at PRIORITY 2 [ TICKS 1 ALLOT 1 TIME 901 (of 1000) ]

[ time 399 ] IO\_START by JOB 1

IO DONE

[ time 399 ] Run JOB 0 at PRIORITY 0 [ TICKS 99 ALLOT 1 TIME 699 (of 1000) ]

[ time 400 ] IO\_DONE by JOB 1

[ time 400 ] Run JOB 1 at PRIORITY 2 [ TICKS 99 ALLOT 1 TIME 900 (of 1000) ]

1. 根据工作数将B设置为一个较小的值，即更频繁地将所有工作设置为最高优先级。

如只有两个工作时，若一个固定在最高优先级，则将B设置为50即可满足要求

示例指令：mlfq.py -l 0,200,0:0,100,5:0,100,5 -q 10 -n 3 -i 5 -B 50 -c，运行结果见下列代码：

（中间代码仅截取过程中关键部分）

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -l 0,200,0:0,100,5:0,100,5 -q 10 -n 3 -i 5 -B 50 -c

Here is the list of inputs:

OPTIONS jobs 3

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 10

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 50

OPTIONS ioTime 5

OPTIONS stayAfterIO False

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 200 - ioFreq 0

Job 1: startTime 0 - runTime 100 - ioFreq 5

Job 2: startTime 0 - runTime 100 - ioFreq 5

[ time 150 ] BOOST ( every 50 )

[ time 150 ] Run JOB 2 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 56 (of 100) ]

[ time 151 ] Run JOB 0 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 137 (of 200) ]

[ time 152 ] IO\_DONE by JOB 1

[ time 152 ] Run JOB 1 at PRIORITY 2 [ TICKS 0 ALLOT 1 TIME 54 (of 100) ]

[ time 153 ] Run JOB 2 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 55 (of 100) ]

[ time 154 ] IO\_START by JOB 2

IO DONE

[ time 154 ] Run JOB 0 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 136 (of 200) ]

[ time 155 ] Run JOB 0 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 135 (of 200) ]

[ time 156 ] Run JOB 0 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 134 (of 200) ]

[ time 157 ] Run JOB 0 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 133 (of 200) ]

[ time 158 ] Run JOB 0 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 132 (of 200) ]

[ time 159 ] IO\_DONE by JOB 2

[ time 159 ] Run JOB 0 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 131 (of 200) ]

[ time 160 ] Run JOB 0 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 130 (of 200) ]

[ time 161 ] Run JOB 0 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 129 (of 200) ]

[ time 162 ] Run JOB 0 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 128 (of 200) ]

[ time 163 ] Run JOB 0 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 127 (of 200) ]

[ time 164 ] Run JOB 1 at PRIORITY 1 [ TICKS 9 ALLOT 1 TIME 53 (of 100) ]

[ time 165 ] Run JOB 1 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 52 (of 100) ]

[ time 166 ] Run JOB 1 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 51 (of 100) ]

[ time 167 ] Run JOB 1 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 50 (of 100) ]

[ time 168 ] IO\_START by JOB 1

IO DONE

[ time 168 ] Run JOB 2 at PRIORITY 1 [ TICKS 8 ALLOT 1 TIME 54 (of 100) ]

[ time 169 ] Run JOB 2 at PRIORITY 1 [ TICKS 7 ALLOT 1 TIME 53 (of 100) ]

[ time 170 ] Run JOB 2 at PRIORITY 1 [ TICKS 6 ALLOT 1 TIME 52 (of 100) ]

[ time 171 ] Run JOB 2 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 51 (of 100) ]

[ time 172 ] Run JOB 2 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 50 (of 100) ]

[ time 173 ] IO\_START by JOB 2

IO DONE

[ time 173 ] IO\_DONE by JOB 1

[ time 173 ] Run JOB 1 at PRIORITY 1 [ TICKS 5 ALLOT 1 TIME 49 (of 100) ]

[ time 174 ] Run JOB 1 at PRIORITY 1 [ TICKS 4 ALLOT 1 TIME 48 (of 100) ]

[ time 175 ] Run JOB 1 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 47 (of 100) ]

[ time 176 ] Run JOB 1 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 46 (of 100) ]

[ time 177 ] Run JOB 1 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 45 (of 100) ]

[ time 178 ] IO\_START by JOB 1

IO DONE

[ time 178 ] IO\_DONE by JOB 2

[ time 178 ] Run JOB 2 at PRIORITY 1 [ TICKS 3 ALLOT 1 TIME 49 (of 100) ]

[ time 179 ] Run JOB 2 at PRIORITY 1 [ TICKS 2 ALLOT 1 TIME 48 (of 100) ]

[ time 180 ] Run JOB 2 at PRIORITY 1 [ TICKS 1 ALLOT 1 TIME 47 (of 100) ]

[ time 181 ] Run JOB 2 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 46 (of 100) ]

[ time 182 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 126 (of 200) ]

[ time 183 ] IO\_DONE by JOB 1

[ time 183 ] Run JOB 1 at PRIORITY 1 [ TICKS 0 ALLOT 1 TIME 44 (of 100) ]

[ time 184 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 125 (of 200) ]

[ time 185 ] Run JOB 0 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 124 (of 200) ]

[ time 186 ] Run JOB 0 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 123 (of 200) ]

[ time 187 ] Run JOB 0 at PRIORITY 0 [ TICKS 5 ALLOT 1 TIME 122 (of 200) ]

[ time 188 ] Run JOB 0 at PRIORITY 0 [ TICKS 4 ALLOT 1 TIME 121 (of 200) ]

[ time 189 ] Run JOB 0 at PRIORITY 0 [ TICKS 3 ALLOT 1 TIME 120 (of 200) ]

[ time 190 ] Run JOB 0 at PRIORITY 0 [ TICKS 2 ALLOT 1 TIME 119 (of 200) ]

[ time 191 ] Run JOB 0 at PRIORITY 0 [ TICKS 1 ALLOT 1 TIME 118 (of 200) ]

[ time 192 ] Run JOB 0 at PRIORITY 0 [ TICKS 0 ALLOT 1 TIME 117 (of 200) ]

[ time 193 ] Run JOB 2 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 45 (of 100) ]

[ time 194 ] IO\_START by JOB 2

IO DONE

[ time 194 ] Run JOB 1 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 43 (of 100) ]

[ time 195 ] Run JOB 1 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 42 (of 100) ]

[ time 196 ] Run JOB 1 at PRIORITY 0 [ TICKS 7 ALLOT 1 TIME 41 (of 100) ]

[ time 197 ] Run JOB 1 at PRIORITY 0 [ TICKS 6 ALLOT 1 TIME 40 (of 100) ]

[ time 198 ] IO\_START by JOB 1

IO DONE

[ time 198 ] Run JOB 0 at PRIORITY 0 [ TICKS 9 ALLOT 1 TIME 116 (of 200) ]

[ time 199 ] IO\_DONE by JOB 2

[ time 199 ] Run JOB 0 at PRIORITY 0 [ TICKS 8 ALLOT 1 TIME 115 (of 200) ]

[ time 200 ] BOOST ( every 50 )

1. -I 指刚完成io的作业是否加入队伍的头端（默认为false）

如有三个需要io工作同时允许时，若将三个工作的io间隔与io时间均设置相等（代码中等于5），则加入头端意味着第三个任务永远得不到运行，尾端则代表着轮流运行。

示例指令：mlfq.py -l 0,100,5:0,100,5:0,100,5 -q 10 -n 3 -i 5 -S -c（尾端）

mlfq.py -l 0,100,5:0,100,5:0,100,5 -q 10 -n 3 -i 5 -S -I -c，运行结果见下列代码：

（中间代码仅截取过程中关键部分）

尾端加入：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -l 0,100,5:0,100,5:0,100,5 -q 10 -n 3 -i 5 -S -c

Here is the list of inputs:

OPTIONS jobs 3

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 10

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO True

OPTIONS iobump False

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 100 - ioFreq 5

Job 1: startTime 0 - runTime 100 - ioFreq 5

Job 2: startTime 0 - runTime 100 - ioFreq 5

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] JOB BEGINS by JOB 1

[ time 0 ] JOB BEGINS by JOB 2

[ time 0 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 99 (of 100) ]

[ time 1 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 98 (of 100) ]

[ time 2 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 97 (of 100) ]

[ time 3 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 96 (of 100) ]

[ time 4 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 95 (of 100) ]

[ time 5 ] IO\_START by JOB 0

IO DONE

[ time 5 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 99 (of 100) ]

[ time 6 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 98 (of 100) ]

[ time 7 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 97 (of 100) ]

[ time 8 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 96 (of 100) ]

[ time 9 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 95 (of 100) ]

[ time 10 ] IO\_START by JOB 1

IO DONE

[ time 10 ] IO\_DONE by JOB 0

[ time 10 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 99 (of 100) ]

[ time 11 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 98 (of 100) ]

[ time 12 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 97 (of 100) ]

[ time 13 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 96 (of 100) ]

[ time 14 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 95 (of 100) ]

[ time 15 ] IO\_START by JOB 2

IO DONE

[ time 15 ] IO\_DONE by JOB 1

[ time 15 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 94 (of 100) ]

[ time 16 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 93 (of 100) ]

[ time 17 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 92 (of 100) ]

[ time 18 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 91 (of 100) ]

[ time 19 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 90 (of 100) ]

[ time 20 ] IO\_START by JOB 0

IO DONE

[ time 20 ] IO\_DONE by JOB 2

[ time 20 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 94 (of 100) ]

[ time 21 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 93 (of 100) ]

[ time 22 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 92 (of 100) ]

[ time 23 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 91 (of 100) ]

[ time 24 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 90 (of 100) ]

[ time 25 ] IO\_START by JOB 1

IO DONE

[ time 25 ] IO\_DONE by JOB 0

[ time 25 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 94 (of 100) ]

[ time 26 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 93 (of 100) ]

[ time 27 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 92 (of 100) ]

[ time 28 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 91 (of 100) ]

[ time 29 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 90 (of 100) ]

[ time 30 ] IO\_START by JOB 2

IO DONE

[ time 30 ] IO\_DONE by JOB 1

[ time 30 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 89 (of 100) ]

[ time 31 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 88 (of 100) ]

[ time 32 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 87 (of 100) ]

[ time 33 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 86 (of 100) ]

[ time 34 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 85 (of 100) ]

[ time 35 ] IO\_START by JOB 0

IO DONE

[ time 35 ] IO\_DONE by JOB 2

[ time 35 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 89 (of 100) ]

[ time 36 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 88 (of 100) ]

[ time 37 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 87 (of 100) ]

[ time 38 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 86 (of 100) ]

[ time 39 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 85 (of 100) ]

[ time 40 ] IO\_START by JOB 1

IO DONE

[ time 40 ] IO\_DONE by JOB 0

[ time 40 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 89 (of 100) ]

[ time 41 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 88 (of 100) ]

[ time 42 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 87 (of 100) ]

[ time 43 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 86 (of 100) ]

[ time 44 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 85 (of 100) ]

[ time 45 ] IO\_START by JOB 2

IO DONE

[ time 45 ] IO\_DONE by JOB 1

[ time 45 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 84 (of 100) ]

[ time 46 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 83 (of 100) ]

[ time 47 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 82 (of 100) ]

[ time 48 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 81 (of 100) ]

[ time 49 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 80 (of 100) ]

[ time 50 ] IO\_START by JOB 0

IO DONE

[ time 50 ] IO\_DONE by JOB 2

[ time 50 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 84 (of 100) ]

[ time 51 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 83 (of 100) ]

[ time 52 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 82 (of 100) ]

[ time 53 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 81 (of 100) ]

[ time 54 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 80 (of 100) ]

[ time 55 ] IO\_START by JOB 1

IO DONE

[ time 55 ] IO\_DONE by JOB 0

[ time 55 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 84 (of 100) ]

[ time 56 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 83 (of 100) ]

[ time 57 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 82 (of 100) ]

[ time 58 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 81 (of 100) ]

[ time 59 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 80 (of 100) ]

[ time 60 ] IO\_START by JOB 2

IO DONE

[ time 60 ] IO\_DONE by JOB 1

[ time 60 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 79 (of 100) ]

[ time 61 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 78 (of 100) ]

[ time 62 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 77 (of 100) ]

[ time 63 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 76 (of 100) ]

[ time 64 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 75 (of 100) ]

[ time 65 ] IO\_START by JOB 0

IO DONE

[ time 65 ] IO\_DONE by JOB 2

[ time 65 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 79 (of 100) ]

[ time 66 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 78 (of 100) ]

[ time 67 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 77 (of 100) ]

[ time 68 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 76 (of 100) ]

[ time 69 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 75 (of 100) ]

[ time 70 ] IO\_START by JOB 1

IO DONE

[ time 70 ] IO\_DONE by JOB 0

[ time 70 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 79 (of 100) ]

[ time 71 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 78 (of 100) ]

[ time 72 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 77 (of 100) ]

[ time 73 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 76 (of 100) ]

[ time 74 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 75 (of 100) ]

[ time 75 ] IO\_START by JOB 2

IO DONE

[ time 75 ] IO\_DONE by JOB 1

[ time 75 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 74 (of 100) ]

[ time 76 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 73 (of 100) ]

[ time 77 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 72 (of 100) ]

[ time 78 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 71 (of 100) ]

[ time 79 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 70 (of 100) ]

[ time 80 ] IO\_START by JOB 0

IO DONE

[ time 80 ] IO\_DONE by JOB 2

[ time 80 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 74 (of 100) ]

[ time 81 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 73 (of 100) ]

[ time 82 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 72 (of 100) ]

[ time 83 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 71 (of 100) ]

[ time 84 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 70 (of 100) ]

[ time 85 ] IO\_START by JOB 1

IO DONE

[ time 85 ] IO\_DONE by JOB 0

[ time 85 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 74 (of 100) ]

[ time 86 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 73 (of 100) ]

[ time 87 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 72 (of 100) ]

[ time 88 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 71 (of 100) ]

[ time 89 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 70 (of 100) ]

[ time 90 ] IO\_START by JOB 2

IO DONE

[ time 90 ] IO\_DONE by JOB 1

[ time 90 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 69 (of 100) ]

[ time 91 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 68 (of 100) ]

[ time 92 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 67 (of 100) ]

[ time 93 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 66 (of 100) ]

[ time 94 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 65 (of 100) ]

[ time 95 ] IO\_START by JOB 0

IO DONE

[ time 95 ] IO\_DONE by JOB 2

[ time 95 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 69 (of 100) ]

[ time 96 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 68 (of 100) ]

[ time 97 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 67 (of 100) ]

[ time 98 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 66 (of 100) ]

[ time 99 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 65 (of 100) ]

[ time 100 ] IO\_START by JOB 1

IO DONE

[ time 100 ] IO\_DONE by JOB 0

头端加入：

C:\Users\Michael Shi\Desktop\ostep-homework-dev-zhongyl\cpu-sched-mlfq>mlfq.py -l 0,100,5:0,100,5:0,100,5 -q 10 -n 3 -i 5 -S -I -c

Here is the list of inputs:

OPTIONS jobs 3

OPTIONS queues 3

OPTIONS allotments for queue 2 is 1

OPTIONS quantum length for queue 2 is 10

OPTIONS allotments for queue 1 is 1

OPTIONS quantum length for queue 1 is 10

OPTIONS allotments for queue 0 is 1

OPTIONS quantum length for queue 0 is 10

OPTIONS boost 0

OPTIONS ioTime 5

OPTIONS stayAfterIO True

OPTIONS iobump True

For each job, three defining characteristics are given:

startTime : at what time does the job enter the system

runTime : the total CPU time needed by the job to finish

ioFreq : every ioFreq time units, the job issues an I/O

(the I/O takes ioTime units to complete)

Job List:

Job 0: startTime 0 - runTime 100 - ioFreq 5

Job 1: startTime 0 - runTime 100 - ioFreq 5

Job 2: startTime 0 - runTime 100 - ioFreq 5

Execution Trace:

[ time 0 ] JOB BEGINS by JOB 0

[ time 0 ] JOB BEGINS by JOB 1

[ time 0 ] JOB BEGINS by JOB 2

[ time 0 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 99 (of 100) ]

[ time 1 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 98 (of 100) ]

[ time 2 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 97 (of 100) ]

[ time 3 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 96 (of 100) ]

[ time 4 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 95 (of 100) ]

[ time 5 ] IO\_START by JOB 0

IO DONE

[ time 5 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 99 (of 100) ]

[ time 6 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 98 (of 100) ]

[ time 7 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 97 (of 100) ]

[ time 8 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 96 (of 100) ]

[ time 9 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 95 (of 100) ]

[ time 10 ] IO\_START by JOB 1

IO DONE

[ time 10 ] IO\_DONE by JOB 0

[ time 10 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 94 (of 100) ]

[ time 11 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 93 (of 100) ]

[ time 12 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 92 (of 100) ]

[ time 13 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 91 (of 100) ]

[ time 14 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 90 (of 100) ]

[ time 15 ] IO\_START by JOB 0

IO DONE

[ time 15 ] IO\_DONE by JOB 1

[ time 15 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 94 (of 100) ]

[ time 16 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 93 (of 100) ]

[ time 17 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 92 (of 100) ]

[ time 18 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 91 (of 100) ]

[ time 19 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 90 (of 100) ]

[ time 20 ] IO\_START by JOB 1

IO DONE

[ time 20 ] IO\_DONE by JOB 0

[ time 20 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 89 (of 100) ]

[ time 21 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 88 (of 100) ]

[ time 22 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 87 (of 100) ]

[ time 23 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 86 (of 100) ]

[ time 24 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 85 (of 100) ]

[ time 25 ] IO\_START by JOB 0

IO DONE

[ time 25 ] IO\_DONE by JOB 1

[ time 25 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 89 (of 100) ]

[ time 26 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 88 (of 100) ]

[ time 27 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 87 (of 100) ]

[ time 28 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 86 (of 100) ]

[ time 29 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 85 (of 100) ]

[ time 30 ] IO\_START by JOB 1

IO DONE

[ time 30 ] IO\_DONE by JOB 0

[ time 30 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 84 (of 100) ]

[ time 31 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 83 (of 100) ]

[ time 32 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 82 (of 100) ]

[ time 33 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 81 (of 100) ]

[ time 34 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 80 (of 100) ]

[ time 35 ] IO\_START by JOB 0

IO DONE

[ time 35 ] IO\_DONE by JOB 1

[ time 35 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 84 (of 100) ]

[ time 36 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 83 (of 100) ]

[ time 37 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 82 (of 100) ]

[ time 38 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 81 (of 100) ]

[ time 39 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 80 (of 100) ]

[ time 40 ] IO\_START by JOB 1

IO DONE

[ time 40 ] IO\_DONE by JOB 0

[ time 40 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 79 (of 100) ]

[ time 41 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 78 (of 100) ]

[ time 42 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 77 (of 100) ]

[ time 43 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 76 (of 100) ]

[ time 44 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 75 (of 100) ]

[ time 45 ] IO\_START by JOB 0

IO DONE

[ time 45 ] IO\_DONE by JOB 1

[ time 45 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 79 (of 100) ]

[ time 46 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 78 (of 100) ]

[ time 47 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 77 (of 100) ]

[ time 48 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 76 (of 100) ]

[ time 49 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 75 (of 100) ]

[ time 50 ] IO\_START by JOB 1

IO DONE

[ time 50 ] IO\_DONE by JOB 0

[ time 50 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 74 (of 100) ]

[ time 51 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 73 (of 100) ]

[ time 52 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 72 (of 100) ]

[ time 53 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 71 (of 100) ]

[ time 54 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 70 (of 100) ]

[ time 55 ] IO\_START by JOB 0

IO DONE

[ time 55 ] IO\_DONE by JOB 1

[ time 55 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 74 (of 100) ]

[ time 56 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 73 (of 100) ]

[ time 57 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 72 (of 100) ]

[ time 58 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 71 (of 100) ]

[ time 59 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 70 (of 100) ]

[ time 60 ] IO\_START by JOB 1

IO DONE

[ time 60 ] IO\_DONE by JOB 0

[ time 60 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 69 (of 100) ]

[ time 61 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 68 (of 100) ]

[ time 62 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 67 (of 100) ]

[ time 63 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 66 (of 100) ]

[ time 64 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 65 (of 100) ]

[ time 65 ] IO\_START by JOB 0

IO DONE

[ time 65 ] IO\_DONE by JOB 1

[ time 65 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 69 (of 100) ]

[ time 66 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 68 (of 100) ]

[ time 67 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 67 (of 100) ]

[ time 68 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 66 (of 100) ]

[ time 69 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 65 (of 100) ]

[ time 70 ] IO\_START by JOB 1

IO DONE

[ time 70 ] IO\_DONE by JOB 0

[ time 70 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 64 (of 100) ]

[ time 71 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 63 (of 100) ]

[ time 72 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 62 (of 100) ]

[ time 73 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 61 (of 100) ]

[ time 74 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 60 (of 100) ]

[ time 75 ] IO\_START by JOB 0

IO DONE

[ time 75 ] IO\_DONE by JOB 1

[ time 75 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 64 (of 100) ]

[ time 76 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 63 (of 100) ]

[ time 77 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 62 (of 100) ]

[ time 78 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 61 (of 100) ]

[ time 79 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 60 (of 100) ]

[ time 80 ] IO\_START by JOB 1

IO DONE

[ time 80 ] IO\_DONE by JOB 0

[ time 80 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 59 (of 100) ]

[ time 81 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 58 (of 100) ]

[ time 82 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 57 (of 100) ]

[ time 83 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 56 (of 100) ]

[ time 84 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 55 (of 100) ]

[ time 85 ] IO\_START by JOB 0

IO DONE

[ time 85 ] IO\_DONE by JOB 1

[ time 85 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 59 (of 100) ]

[ time 86 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 58 (of 100) ]

[ time 87 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 57 (of 100) ]

[ time 88 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 56 (of 100) ]

[ time 89 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 55 (of 100) ]

[ time 90 ] IO\_START by JOB 1

IO DONE

[ time 90 ] IO\_DONE by JOB 0

[ time 90 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 54 (of 100) ]

[ time 91 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 53 (of 100) ]

[ time 92 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 52 (of 100) ]

[ time 93 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 51 (of 100) ]

[ time 94 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 50 (of 100) ]

[ time 95 ] IO\_START by JOB 0

IO DONE

[ time 95 ] IO\_DONE by JOB 1

[ time 95 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 54 (of 100) ]

[ time 96 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 53 (of 100) ]

[ time 97 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 52 (of 100) ]

[ time 98 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 51 (of 100) ]

[ time 99 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 50 (of 100) ]

[ time 100 ] IO\_START by JOB 1

IO DONE

[ time 100 ] IO\_DONE by JOB 0

[ time 100 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 49 (of 100) ]

[ time 101 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 48 (of 100) ]

[ time 102 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 47 (of 100) ]

[ time 103 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 46 (of 100) ]

[ time 104 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 45 (of 100) ]

[ time 105 ] IO\_START by JOB 0

IO DONE

[ time 105 ] IO\_DONE by JOB 1

[ time 105 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 49 (of 100) ]

[ time 106 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 48 (of 100) ]

[ time 107 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 47 (of 100) ]

[ time 108 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 46 (of 100) ]

[ time 109 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 45 (of 100) ]

[ time 110 ] IO\_START by JOB 1

IO DONE

[ time 110 ] IO\_DONE by JOB 0

[ time 110 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 44 (of 100) ]

[ time 111 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 43 (of 100) ]

[ time 112 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 42 (of 100) ]

[ time 113 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 41 (of 100) ]

[ time 114 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 40 (of 100) ]

[ time 115 ] IO\_START by JOB 0

IO DONE

[ time 115 ] IO\_DONE by JOB 1

[ time 115 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 44 (of 100) ]

[ time 116 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 43 (of 100) ]

[ time 117 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 42 (of 100) ]

[ time 118 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 41 (of 100) ]

[ time 119 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 40 (of 100) ]

[ time 120 ] IO\_START by JOB 1

IO DONE

[ time 120 ] IO\_DONE by JOB 0

[ time 120 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 39 (of 100) ]

[ time 121 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 38 (of 100) ]

[ time 122 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 37 (of 100) ]

[ time 123 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 36 (of 100) ]

[ time 124 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 35 (of 100) ]

[ time 125 ] IO\_START by JOB 0

IO DONE

[ time 125 ] IO\_DONE by JOB 1

[ time 125 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 39 (of 100) ]

[ time 126 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 38 (of 100) ]

[ time 127 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 37 (of 100) ]

[ time 128 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 36 (of 100) ]

[ time 129 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 35 (of 100) ]

[ time 130 ] IO\_START by JOB 1

IO DONE

[ time 130 ] IO\_DONE by JOB 0

[ time 130 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 34 (of 100) ]

[ time 131 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 33 (of 100) ]

[ time 132 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 32 (of 100) ]

[ time 133 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 31 (of 100) ]

[ time 134 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 30 (of 100) ]

[ time 135 ] IO\_START by JOB 0

IO DONE

[ time 135 ] IO\_DONE by JOB 1

[ time 135 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 34 (of 100) ]

[ time 136 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 33 (of 100) ]

[ time 137 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 32 (of 100) ]

[ time 138 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 31 (of 100) ]

[ time 139 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 30 (of 100) ]

[ time 140 ] IO\_START by JOB 1

IO DONE

[ time 140 ] IO\_DONE by JOB 0

[ time 140 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 29 (of 100) ]

[ time 141 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 28 (of 100) ]

[ time 142 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 27 (of 100) ]

[ time 143 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 26 (of 100) ]

[ time 144 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 25 (of 100) ]

[ time 145 ] IO\_START by JOB 0

IO DONE

[ time 145 ] IO\_DONE by JOB 1

[ time 145 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 29 (of 100) ]

[ time 146 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 28 (of 100) ]

[ time 147 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 27 (of 100) ]

[ time 148 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 26 (of 100) ]

[ time 149 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 25 (of 100) ]

[ time 150 ] IO\_START by JOB 1

IO DONE

[ time 150 ] IO\_DONE by JOB 0

[ time 150 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 24 (of 100) ]

[ time 151 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 23 (of 100) ]

[ time 152 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 22 (of 100) ]

[ time 153 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 21 (of 100) ]

[ time 154 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 20 (of 100) ]

[ time 155 ] IO\_START by JOB 0

IO DONE

[ time 155 ] IO\_DONE by JOB 1

[ time 155 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 24 (of 100) ]

[ time 156 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 23 (of 100) ]

[ time 157 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 22 (of 100) ]

[ time 158 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 21 (of 100) ]

[ time 159 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 20 (of 100) ]

[ time 160 ] IO\_START by JOB 1

IO DONE

[ time 160 ] IO\_DONE by JOB 0

[ time 160 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 19 (of 100) ]

[ time 161 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 18 (of 100) ]

[ time 162 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 17 (of 100) ]

[ time 163 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 16 (of 100) ]

[ time 164 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 15 (of 100) ]

[ time 165 ] IO\_START by JOB 0

IO DONE

[ time 165 ] IO\_DONE by JOB 1

[ time 165 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 19 (of 100) ]

[ time 166 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 18 (of 100) ]

[ time 167 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 17 (of 100) ]

[ time 168 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 16 (of 100) ]

[ time 169 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 15 (of 100) ]

[ time 170 ] IO\_START by JOB 1

IO DONE

[ time 170 ] IO\_DONE by JOB 0

[ time 170 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 14 (of 100) ]

[ time 171 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 13 (of 100) ]

[ time 172 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 12 (of 100) ]

[ time 173 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 11 (of 100) ]

[ time 174 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 10 (of 100) ]

[ time 175 ] IO\_START by JOB 0

IO DONE

[ time 175 ] IO\_DONE by JOB 1

[ time 175 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 14 (of 100) ]

[ time 176 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 13 (of 100) ]

[ time 177 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 12 (of 100) ]

[ time 178 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 11 (of 100) ]

[ time 179 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 10 (of 100) ]

[ time 180 ] IO\_START by JOB 1

IO DONE

[ time 180 ] IO\_DONE by JOB 0

[ time 180 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 9 (of 100) ]

[ time 181 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 8 (of 100) ]

[ time 182 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 7 (of 100) ]

[ time 183 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 6 (of 100) ]

[ time 184 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 5 (of 100) ]

[ time 185 ] IO\_START by JOB 0

IO DONE

[ time 185 ] IO\_DONE by JOB 1

[ time 185 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 9 (of 100) ]

[ time 186 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 8 (of 100) ]

[ time 187 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 7 (of 100) ]

[ time 188 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 6 (of 100) ]

[ time 189 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 5 (of 100) ]

[ time 190 ] IO\_START by JOB 1

IO DONE

[ time 190 ] IO\_DONE by JOB 0

[ time 190 ] Run JOB 0 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 4 (of 100) ]

[ time 191 ] Run JOB 0 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 3 (of 100) ]

[ time 192 ] Run JOB 0 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 2 (of 100) ]

[ time 193 ] Run JOB 0 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 1 (of 100) ]

[ time 194 ] Run JOB 0 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 0 (of 100) ]

[ time 195 ] FINISHED JOB 0

[ time 195 ] IO\_DONE by JOB 1

[ time 195 ] Run JOB 1 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 4 (of 100) ]

[ time 196 ] Run JOB 1 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 3 (of 100) ]

[ time 197 ] Run JOB 1 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 2 (of 100) ]

[ time 198 ] Run JOB 1 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 1 (of 100) ]

[ time 199 ] Run JOB 1 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 0 (of 100) ]

[ time 200 ] FINISHED JOB 1

[ time 200 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 99 (of 100) ]

[ time 201 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 98 (of 100) ]

[ time 202 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 97 (of 100) ]

[ time 203 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 96 (of 100) ]

[ time 204 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 95 (of 100) ]

[ time 205 ] IO\_START by JOB 2

IO DONE

[ time 205 ] IDLE

[ time 206 ] IDLE

[ time 207 ] IDLE

[ time 208 ] IDLE

[ time 209 ] IDLE

[ time 210 ] IO\_DONE by JOB 2

[ time 210 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 94 (of 100) ]

[ time 211 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 93 (of 100) ]

[ time 212 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 92 (of 100) ]

[ time 213 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 91 (of 100) ]

[ time 214 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 90 (of 100) ]

[ time 215 ] IO\_START by JOB 2

IO DONE

[ time 215 ] IDLE

[ time 216 ] IDLE

[ time 217 ] IDLE

[ time 218 ] IDLE

[ time 219 ] IDLE

[ time 220 ] IO\_DONE by JOB 2

[ time 220 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 89 (of 100) ]

[ time 221 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 88 (of 100) ]

[ time 222 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 87 (of 100) ]

[ time 223 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 86 (of 100) ]

[ time 224 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 85 (of 100) ]

[ time 225 ] IO\_START by JOB 2

IO DONE

[ time 225 ] IDLE

[ time 226 ] IDLE

[ time 227 ] IDLE

[ time 228 ] IDLE

[ time 229 ] IDLE

[ time 230 ] IO\_DONE by JOB 2

[ time 230 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 84 (of 100) ]

[ time 231 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 83 (of 100) ]

[ time 232 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 82 (of 100) ]

[ time 233 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 81 (of 100) ]

[ time 234 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 80 (of 100) ]

[ time 235 ] IO\_START by JOB 2

IO DONE

[ time 235 ] IDLE

[ time 236 ] IDLE

[ time 237 ] IDLE

[ time 238 ] IDLE

[ time 239 ] IDLE

[ time 240 ] IO\_DONE by JOB 2

[ time 240 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 79 (of 100) ]

[ time 241 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 78 (of 100) ]

[ time 242 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 77 (of 100) ]

[ time 243 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 76 (of 100) ]

[ time 244 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 75 (of 100) ]

[ time 245 ] IO\_START by JOB 2

IO DONE

[ time 245 ] IDLE

[ time 246 ] IDLE

[ time 247 ] IDLE

[ time 248 ] IDLE

[ time 249 ] IDLE

[ time 250 ] IO\_DONE by JOB 2

[ time 250 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 74 (of 100) ]

[ time 251 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 73 (of 100) ]

[ time 252 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 72 (of 100) ]

[ time 253 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 71 (of 100) ]

[ time 254 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 70 (of 100) ]

[ time 255 ] IO\_START by JOB 2

IO DONE

[ time 255 ] IDLE

[ time 256 ] IDLE

[ time 257 ] IDLE

[ time 258 ] IDLE

[ time 259 ] IDLE

[ time 260 ] IO\_DONE by JOB 2

[ time 260 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 69 (of 100) ]

[ time 261 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 68 (of 100) ]

[ time 262 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 67 (of 100) ]

[ time 263 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 66 (of 100) ]

[ time 264 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 65 (of 100) ]

[ time 265 ] IO\_START by JOB 2

IO DONE

[ time 265 ] IDLE

[ time 266 ] IDLE

[ time 267 ] IDLE

[ time 268 ] IDLE

[ time 269 ] IDLE

[ time 270 ] IO\_DONE by JOB 2

[ time 270 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 64 (of 100) ]

[ time 271 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 63 (of 100) ]

[ time 272 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 62 (of 100) ]

[ time 273 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 61 (of 100) ]

[ time 274 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 60 (of 100) ]

[ time 275 ] IO\_START by JOB 2

IO DONE

[ time 275 ] IDLE

[ time 276 ] IDLE

[ time 277 ] IDLE

[ time 278 ] IDLE

[ time 279 ] IDLE

[ time 280 ] IO\_DONE by JOB 2

[ time 280 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 59 (of 100) ]

[ time 281 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 58 (of 100) ]

[ time 282 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 57 (of 100) ]

[ time 283 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 56 (of 100) ]

[ time 284 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 55 (of 100) ]

[ time 285 ] IO\_START by JOB 2

IO DONE

[ time 285 ] IDLE

[ time 286 ] IDLE

[ time 287 ] IDLE

[ time 288 ] IDLE

[ time 289 ] IDLE

[ time 290 ] IO\_DONE by JOB 2

[ time 290 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 54 (of 100) ]

[ time 291 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 53 (of 100) ]

[ time 292 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 52 (of 100) ]

[ time 293 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 51 (of 100) ]

[ time 294 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 50 (of 100) ]

[ time 295 ] IO\_START by JOB 2

IO DONE

[ time 295 ] IDLE

[ time 296 ] IDLE

[ time 297 ] IDLE

[ time 298 ] IDLE

[ time 299 ] IDLE

[ time 300 ] IO\_DONE by JOB 2

[ time 300 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 49 (of 100) ]

[ time 301 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 48 (of 100) ]

[ time 302 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 47 (of 100) ]

[ time 303 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 46 (of 100) ]

[ time 304 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 45 (of 100) ]

[ time 305 ] IO\_START by JOB 2

IO DONE

[ time 305 ] IDLE

[ time 306 ] IDLE

[ time 307 ] IDLE

[ time 308 ] IDLE

[ time 309 ] IDLE

[ time 310 ] IO\_DONE by JOB 2

[ time 310 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 44 (of 100) ]

[ time 311 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 43 (of 100) ]

[ time 312 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 42 (of 100) ]

[ time 313 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 41 (of 100) ]

[ time 314 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 40 (of 100) ]

[ time 315 ] IO\_START by JOB 2

IO DONE

[ time 315 ] IDLE

[ time 316 ] IDLE

[ time 317 ] IDLE

[ time 318 ] IDLE

[ time 319 ] IDLE

[ time 320 ] IO\_DONE by JOB 2

[ time 320 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 39 (of 100) ]

[ time 321 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 38 (of 100) ]

[ time 322 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 37 (of 100) ]

[ time 323 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 36 (of 100) ]

[ time 324 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 35 (of 100) ]

[ time 325 ] IO\_START by JOB 2

IO DONE

[ time 325 ] IDLE

[ time 326 ] IDLE

[ time 327 ] IDLE

[ time 328 ] IDLE

[ time 329 ] IDLE

[ time 330 ] IO\_DONE by JOB 2

[ time 330 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 34 (of 100) ]

[ time 331 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 33 (of 100) ]

[ time 332 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 32 (of 100) ]

[ time 333 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 31 (of 100) ]

[ time 334 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 30 (of 100) ]

[ time 335 ] IO\_START by JOB 2

IO DONE

[ time 335 ] IDLE

[ time 336 ] IDLE

[ time 337 ] IDLE

[ time 338 ] IDLE

[ time 339 ] IDLE

[ time 340 ] IO\_DONE by JOB 2

[ time 340 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 29 (of 100) ]

[ time 341 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 28 (of 100) ]

[ time 342 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 27 (of 100) ]

[ time 343 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 26 (of 100) ]

[ time 344 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 25 (of 100) ]

[ time 345 ] IO\_START by JOB 2

IO DONE

[ time 345 ] IDLE

[ time 346 ] IDLE

[ time 347 ] IDLE

[ time 348 ] IDLE

[ time 349 ] IDLE

[ time 350 ] IO\_DONE by JOB 2

[ time 350 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 24 (of 100) ]

[ time 351 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 23 (of 100) ]

[ time 352 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 22 (of 100) ]

[ time 353 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 21 (of 100) ]

[ time 354 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 20 (of 100) ]

[ time 355 ] IO\_START by JOB 2

IO DONE

[ time 355 ] IDLE

[ time 356 ] IDLE

[ time 357 ] IDLE

[ time 358 ] IDLE

[ time 359 ] IDLE

[ time 360 ] IO\_DONE by JOB 2

[ time 360 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 19 (of 100) ]

[ time 361 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 18 (of 100) ]

[ time 362 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 17 (of 100) ]

[ time 363 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 16 (of 100) ]

[ time 364 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 15 (of 100) ]

[ time 365 ] IO\_START by JOB 2

IO DONE

[ time 365 ] IDLE

[ time 366 ] IDLE

[ time 367 ] IDLE

[ time 368 ] IDLE

[ time 369 ] IDLE

[ time 370 ] IO\_DONE by JOB 2

[ time 370 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 14 (of 100) ]

[ time 371 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 13 (of 100) ]

[ time 372 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 12 (of 100) ]

[ time 373 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 11 (of 100) ]

[ time 374 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 10 (of 100) ]

[ time 375 ] IO\_START by JOB 2

IO DONE

[ time 375 ] IDLE

[ time 376 ] IDLE

[ time 377 ] IDLE

[ time 378 ] IDLE

[ time 379 ] IDLE

[ time 380 ] IO\_DONE by JOB 2

[ time 380 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 9 (of 100) ]

[ time 381 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 8 (of 100) ]

[ time 382 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 7 (of 100) ]

[ time 383 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 6 (of 100) ]

[ time 384 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 5 (of 100) ]

[ time 385 ] IO\_START by JOB 2

IO DONE

[ time 385 ] IDLE

[ time 386 ] IDLE

[ time 387 ] IDLE

[ time 388 ] IDLE

[ time 389 ] IDLE

[ time 390 ] IO\_DONE by JOB 2

[ time 390 ] Run JOB 2 at PRIORITY 2 [ TICKS 9 ALLOT 1 TIME 4 (of 100) ]

[ time 391 ] Run JOB 2 at PRIORITY 2 [ TICKS 8 ALLOT 1 TIME 3 (of 100) ]

[ time 392 ] Run JOB 2 at PRIORITY 2 [ TICKS 7 ALLOT 1 TIME 2 (of 100) ]

[ time 393 ] Run JOB 2 at PRIORITY 2 [ TICKS 6 ALLOT 1 TIME 1 (of 100) ]

[ time 394 ] Run JOB 2 at PRIORITY 2 [ TICKS 5 ALLOT 1 TIME 0 (of 100) ]

[ time 395 ] FINISHED JOB 2

Final statistics:

Job 0: startTime 0 - response 0 - turnaround 195

Job 1: startTime 0 - response 5 - turnaround 200

Job 2: startTime 0 - response 200 - turnaround 395

Avg 2: startTime n/a - response 68.33 - turnaround 263.33