

→ : currently scheduling from this level.

rq_i : quota of run queue at i^{th} priority level

= 20 scheduler ticks for each level

[for this example Assume 1 scheduler tick = 1ms]

Let initially we have the following state of the queues

(Assume we have only 3 priority levels)

High

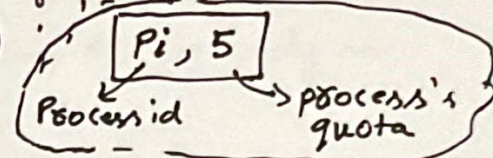
→ 0 $rq_0 = 20$ → $P1, 5$ → $P2, 5$

1 $rq_1 = 20$ → $P3, 5$ → $P4, 5$

low 2 $rq_2 = 20$ → $P5, 5$

Active array

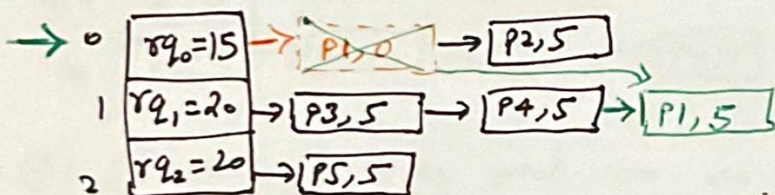
(sleep)
Waiting processes



expired array is empty.

□ : process moved from level 1 to down
□ : " " " " 0 "

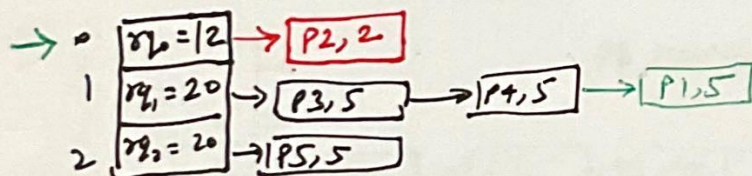
(1) $P1$ runs for 5ms, it's quota will be over, shift it to next level!



expired array is still empty as above.

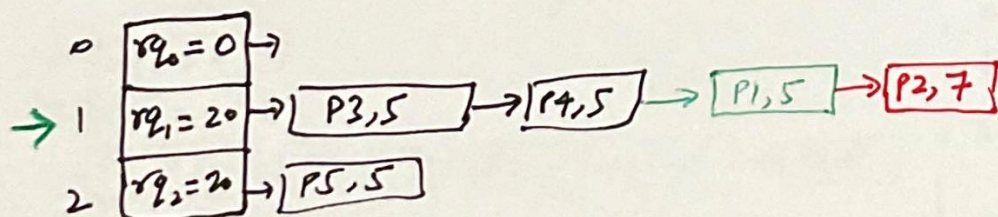
new quota of $P1$: $0 + 5 = 5$.

(2) $P2$ runs for 8ms and goes to sleep; shift it at the end of current queue



expired array is empty

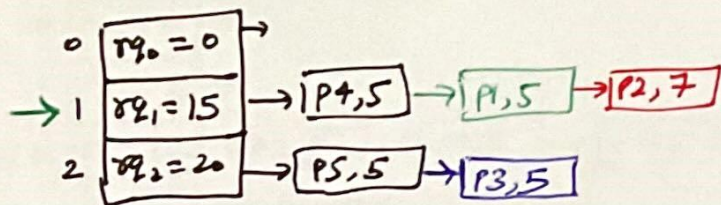
As there are no runnable process at level 0, move to level 1 and shift all processes at level 0 to the end of level 1.



expired array is empty.

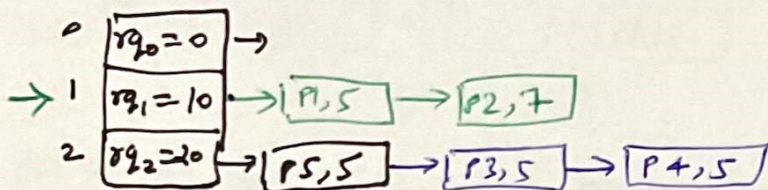
Note : $rq_0 = 0$ Now, and new quota of $P2 = 2 + 5 = 7$

(3) P3 runs for 5ms and moves to next level.



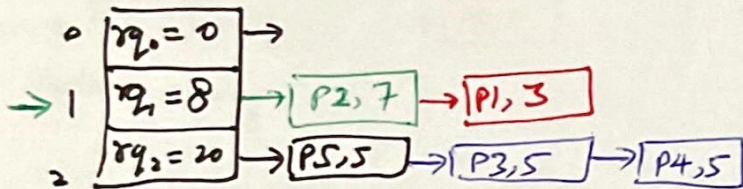
expired array is empty.

(4) P4 runs for 5ms and moves to next level, and P2 is ready now.

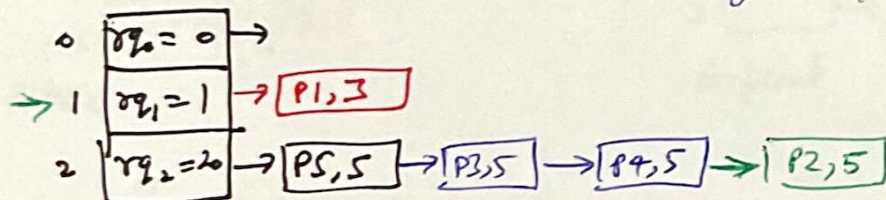


expired array is empty.

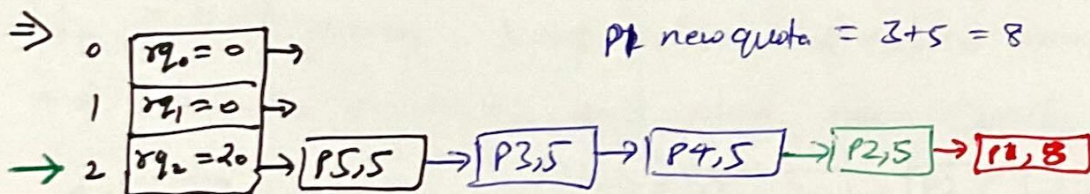
(5) P1 runs for 2ms and goes to sleep.



(6) P2 runs for 7ms and as no runnable process remains at level 1, we move to next level by shifting both processes down.

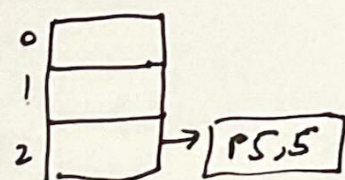
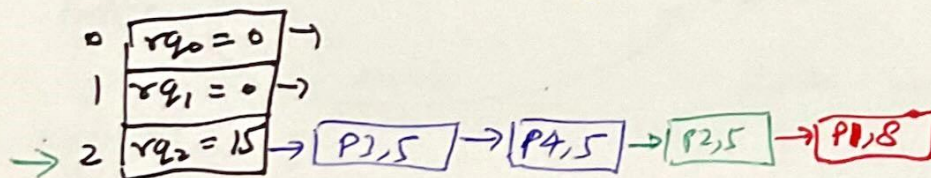


expired array is empty.



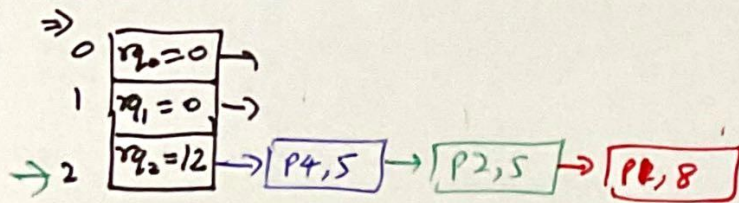
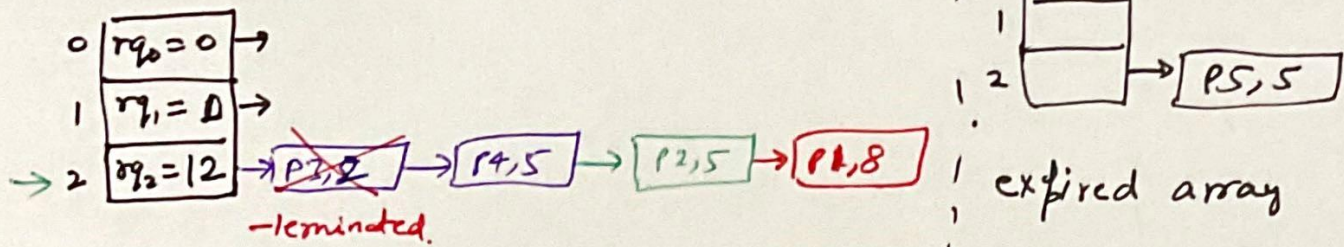
P1 new quota = 3+5 = 8

(7) P5 runs for 5ms and shifted to expired array at its original run queue (at its priority level)

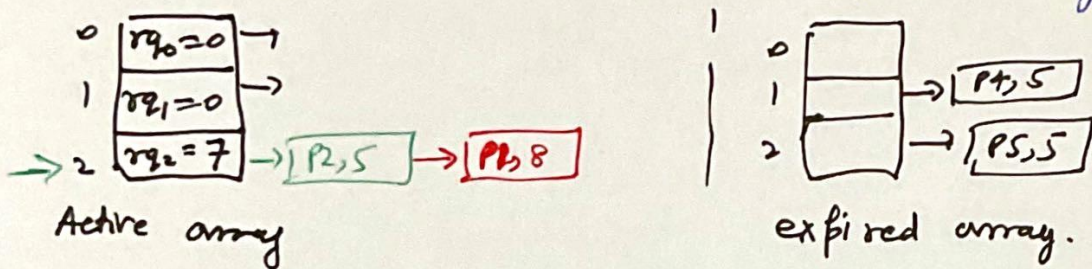


expired array

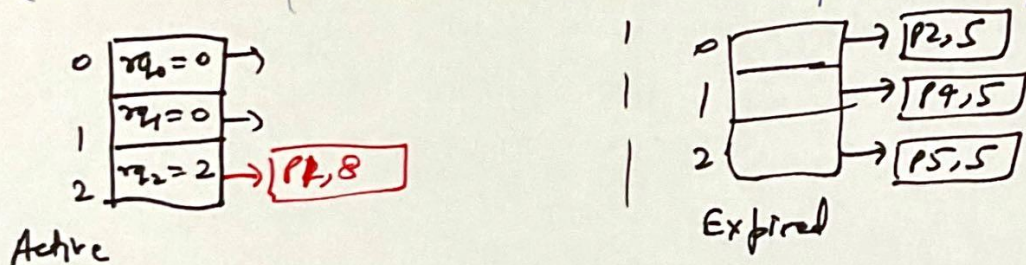
(8) P3 run for 3ms and finishes.



(9) P4 run for 5ms and moves to expired array.



(10) P2 run for 5ms and move to expired array



As there are no runnable processes in Active array move everything to Expired array, swap active and expire array, reset run queue and process's quota's and start new Epoch.

