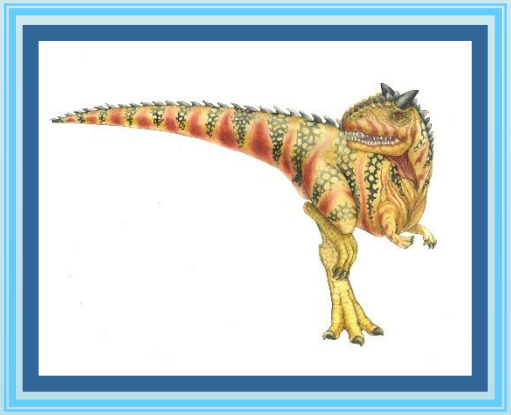
Mustansiriyah University
College of Education
Computers Science Department

Chapter 4: CPU Scheduling
Part-4
جدولة وحدة المعالجة المركزية



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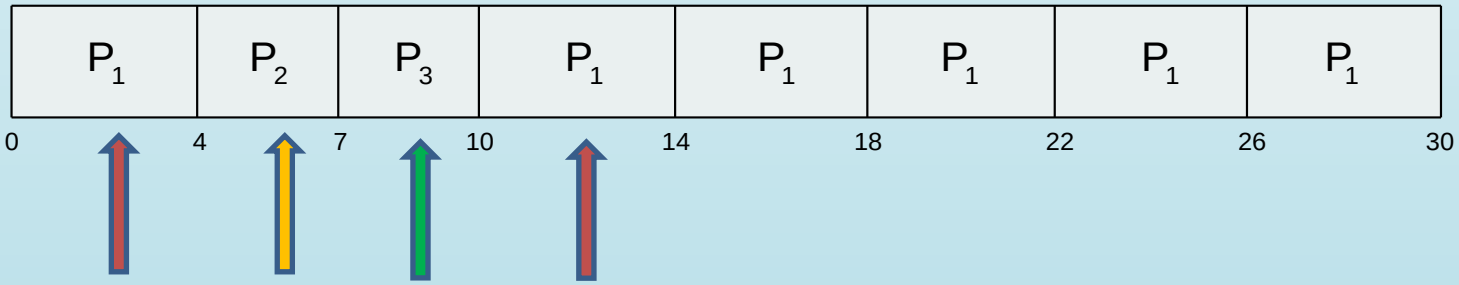
4- Round Robin Scheduling (RR)

- كل Process يحصل على وحدة صغيرة من وقت الـ CPU تدعى بالـ (**time quantum *q***) عادةً تكون بين **(100-10)** ms. بعد ان ينقضي هذا الوقت اذا كانت الـ Process لم تنهي عملها ضمنه فيتم استقاع عملها وتضاف الى نهاية الـ Ready queue .

- Example 1: Draw the Gantt chart and calculate the average waiting for the processes as in the given table with **time quantum** *q=4*?

Processes	Burst time
P1	24
P2	3
P3	3



- Waiting time:

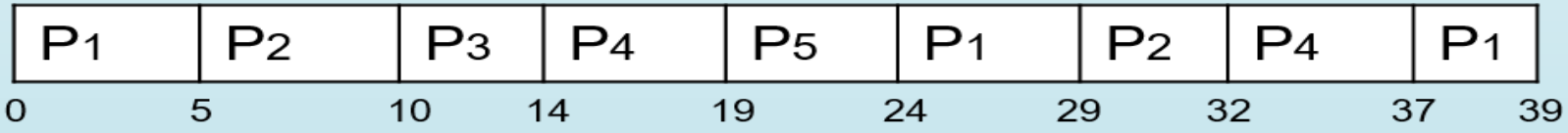
P_1 = [0+(10-4)]=6
P_2 = 4
P_3 = 7

The average waiting time is (6+4+7)/3 = 5.66 Ms.

Round Robin Scheduling (RR)Cont.

- Example: Draw the Gantt chart and calculate the average waiting time for the processes as in the given table with **time quantum** *q=5*?

Processes	Burst time
P1	12
P2	8
P3	4
P4	10
P5	5



- Waiting time:

P_1 = [0+(24-5)+(37-29)]=27
P_2 = [(5+(29-10)]=24
P_3 = 10
P_4 = [14+(32-19)=27
P_5 = 19

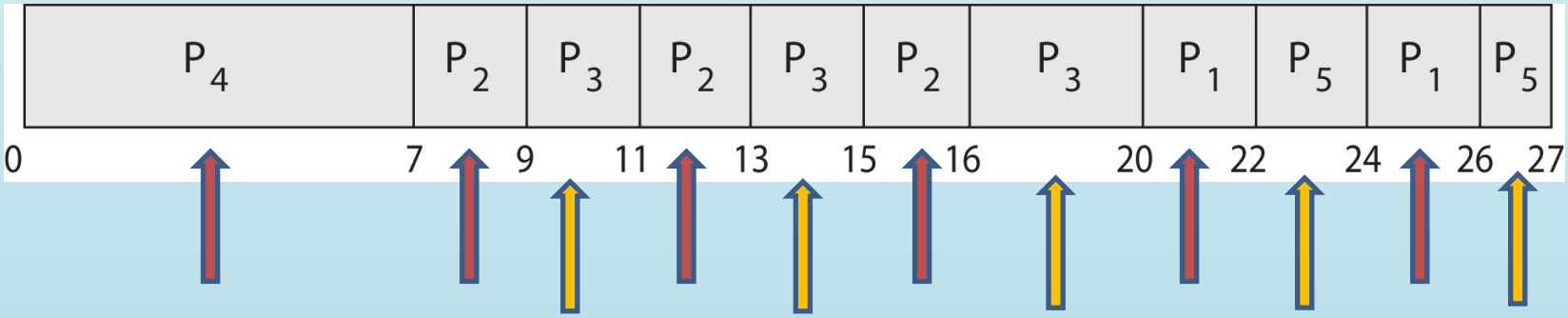
Average waiting time = (27+24+10+27+19) / 5 = 21.4 Ms.

Priority Scheduling with / Round-Robin

- Example: Draw the Gantt chart and calculate the average waiting for the processes as in the given table with **time quantum** *q=2,* using **Priority** and **Round Robin** algorithms?

Processes	Burst time	Priority
P1	4	3
P2	5	2
P3	8	2
P4	7	1
P5	3	3

- الحل: يتم تنفيذ الـ Process ذو أعلى أولوية . الـ Processes التي تكون متساوية في الاولوية يتم تنفيذها باستخدام RR .



- Calculate the average waiting time?

End of Chapter 4- Part 4