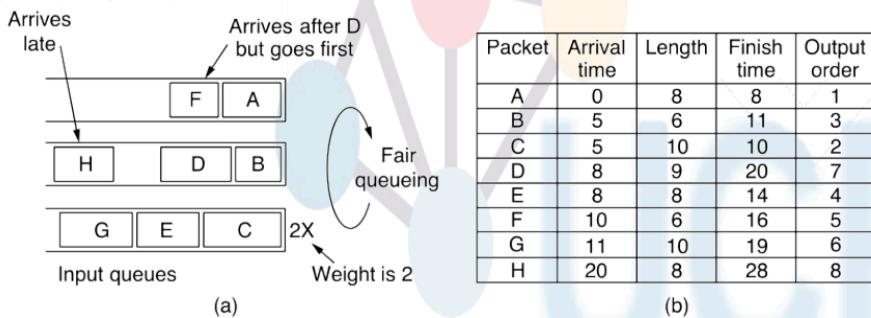


## Queueing exercise

2024

- Consider the packet queues shown in Fig. 5-29
- What is the finish time and output order of the packets if the middle queue, instead of the bottom queue, has a weight of 2?
- Order packets with the same finish time alphabetically

CIO121



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Figure 5-29. (a) Weighted Fair Queueing. (b) Finishing times for the packets.

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### Peso por cola:

- Arriba (F, A) → 1
- Medio (H, D, B) → 2
- Abajo (G, E, C) → 1

Packet	Length	Finish time	Output order
A	8	$\max(0, 8) + 8/1 = 16$	1
B	6	$\max(16, 6) + 6/2 = 19$	2
C	10	$\max(19, 10) + 10/1 = 29$	3
D	9	$\max(29, 9) + 9/2 = 33.5$	4
E	8	$\max(33.5, 8) + 8/1 = 41.5$	5
F	6	$\max(41.5, 6) + 6/1 = 47.5$	6
G	10	$\max(47.5, 10) + 10/1 = 57.5$	7
H	8	$\max(57.5, 8) + 8/2 = 61.5$	8

# Token bucket exercise

A computer on a 6-Mbps network is regulated by a token bucket. The token bucket is filled at a rate of 1 Mbps. It is initially filled to capacity with 8 megabits.

How long can the computer transmit at the full 6 Mbps?

Ancho de banda = 6 Mbps

El balde de tokens se llena a una velocidad de 1 Mbps

El balde se llena al inicio con 8 Mb

Se sacan tokens a una velocidad de 6-1 Mbps

$8 \text{ Mb} / (6 - 1) \text{ Mbps} = 1.6 \text{ s}$

Entonces, puede transmitir 1.6 segundos en 6 Mbps.