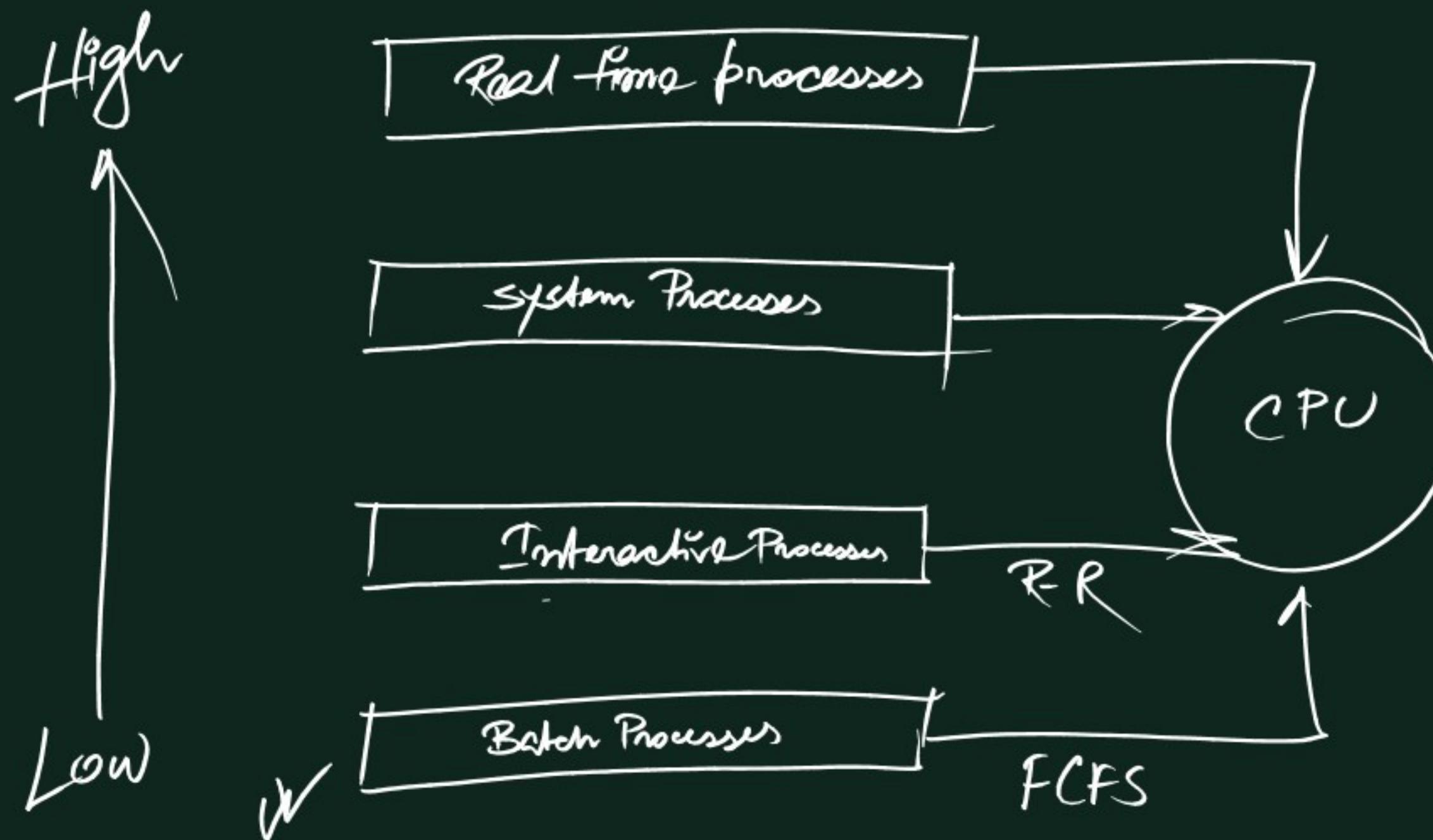
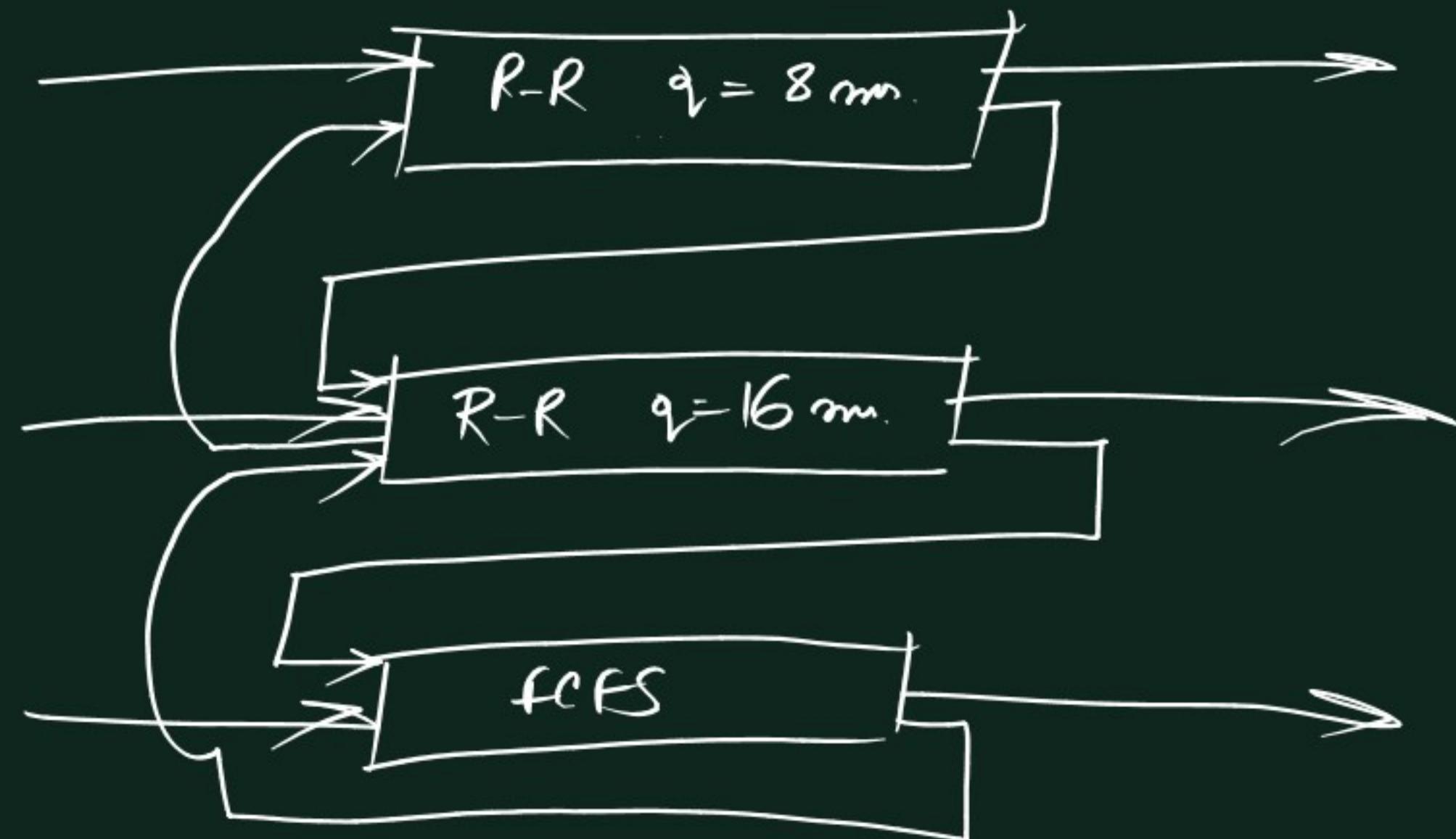


Multi-level Queue Scheduling



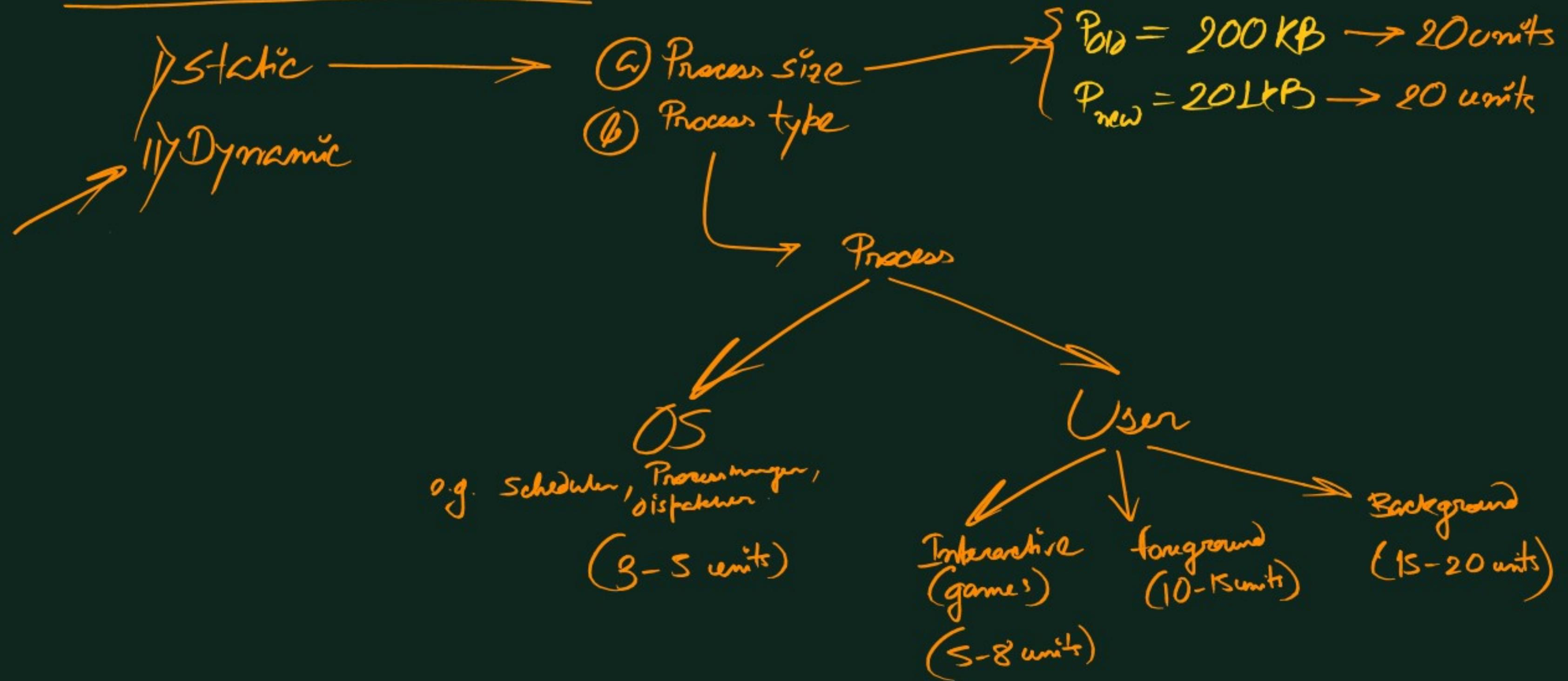
Multi-level feedback Queue Scheduling

H



L

STF with predicted BT



Dynamic

a) Simple averaging:

1. Given 'n' processes P_1, \dots, P_n

2. Let the actual BT be t_i

3. Let the predicted BT be \tilde{T}_i

$$\tilde{T}_{n+1} = \frac{1}{n} \sum_{i=1}^n t_i$$

α = smoothing factor
 $0 \leq \alpha \leq 1$

Exponential averaging:

$$Y_{n+1} = \alpha t_n + (1-\alpha) Y_n$$

$$Y_{n+1} = \alpha t_n + (1-\alpha) Y_n \dots \textcircled{1}$$



$$Y_n = \alpha t_{n-1} + (1-\alpha) Y_{n-1} \dots \textcircled{2}$$

$$Y_{n+1} = \alpha t_n + (1-\alpha) \left(\alpha t_{n-1} + (1-\alpha) Y_{n-1} \right)$$

$$= \alpha t_n + (1-\alpha) \alpha t_{n-1} + (1-\alpha)^2 Y_{n-1} \dots'$$

Q: Given, $\alpha = 0.5$

$$\gamma_1 = 10$$

the actual BT_S (t_1, t_2, t_3, t_4) = (4, 8, 6, 7), then $\gamma_S = ?$

$$\boxed{\gamma_{n+1} = \alpha t_n + (1-\alpha) \gamma_n}$$

$$\begin{matrix} 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \end{matrix}$$

$$\begin{matrix} 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \\ 7 \end{matrix}$$

$$\gamma_S = ?$$