

CPU Scheduling Exponential Averaging:

$$T_{n+1} = \alpha t_n + (1 - \alpha) T_n$$

$\Rightarrow t_n$ = actual length of n^{th} CPU burst.

$\Rightarrow T_{n+1}$ = predicted value of the next CPU burst.

$\Rightarrow \alpha, 0 \leq \alpha \leq 1$

Calculate the exponential averaging with

$$T_1 = 10$$

$$\alpha = 0.5$$

and the algorithm is SJF with previous runs as 8, 7, 4, 16.

$$t_1 = 4, t_2 = 7, t_3 = 8, t_4 = 16$$

$$\Rightarrow T_{n+1} = \alpha t_n + (1 - \alpha) T_n$$

$$T_{1+1} = (0.5) t_1 + (1 - 0.5) T_1$$

$$T_2 = (0.5)(4) + (0.5)(10)$$

$$T_2 = 2 + 5 \Rightarrow 7$$

$$\Rightarrow T_{n+1} = \alpha t_n + (1 - \alpha) T_n$$

$$T_{2+1} = (0.5) t_2 + (1 - 0.5) T_2$$

$$T_3 = (0.5)(7) + (0.5)(7)$$

$$T_3 = 3.5 + 3.5 \Rightarrow 7$$