10/11/13

$1 \mid \mid L_{max}$

Job j has a due date d_j.

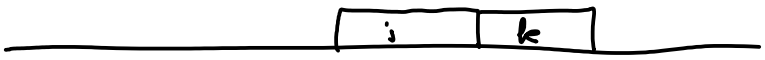
Lateness $L_j = (C_j - d_j)^+$

$L_{max} = \max_j L_j$

Sort so that $d_1 \leq d_2 \leq \ldots \leq d_n$

Suppose out of order!

$d_j < d_k$



$$\max\left(C_j^{OLD} - d_j, C_k^{OLD} - d_k\right)$$

$$= C_j^{OLD} - d_j$$

C_k^{NEW}

$$\max\left(C_j^{NEW} - d_j, C_j^{OLD} - d_k\right)$$

$$\leq C_j^{OLD} - d_j \;,\; C_j^{OLD} - d_j$$

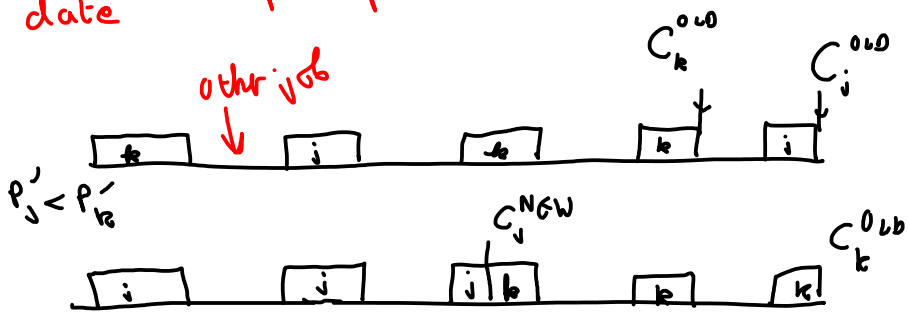
$1 \mid r_j, pmtn \mid \sum C_j$

release date

pre-emption

SRPT rule

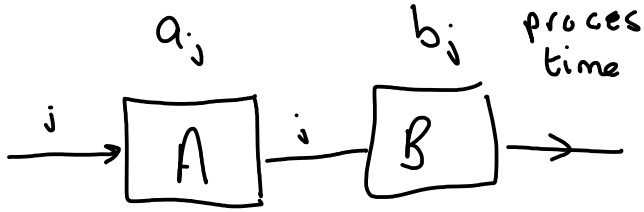
Shortest Remaining Processing Time $\leftarrow p'_j$



Johnson's Rule

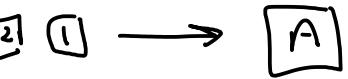
$F2 \mid\mid C_{max}$

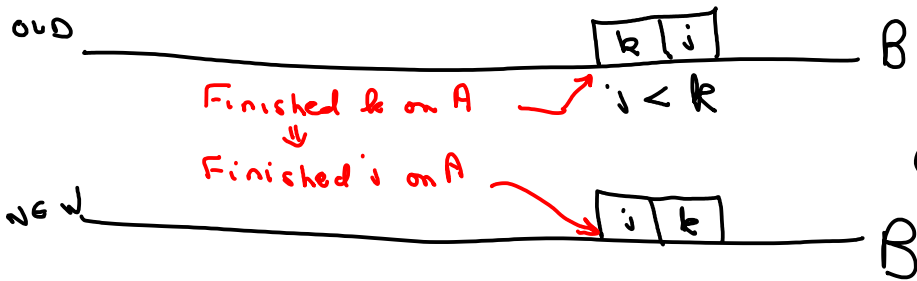
- F: Flow shop: a job goes on A and then B.
- 2: 2 machines A & B
- C_{max}: all jobs are completed.



Permutation Flow shop
- if one uses same order on both machines

We can assume it is a permutation flow shop.





C_{max} does not change

Johnson's Rule: $X = \{j : a_j \le b_j\}$, $Y = [n] \setminus X$