Precedence Constraints: $1|\text{prec}|L_{\max}$

Example

j	p_j	d_j
A	**2**	**10**
B	**3**	**24**
C	**1**	**21**
D	**6**	**5**
E	**5**	**15**
F	**4**	**19**

Precedence: $A \to B, B \to C, B \to F, D \to E, E \to F$

Algorithmic Ideas?: **Can we choose which job will run first?**

Precedence Constraints: $1|\text{prec}|L_{\max}$

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Precedence: $A \to B, B \to C, B \to F, D \to E, E \to F$

Algorithmic Ideas?: **Can we choose which job will run first? NO, but we can choose which job will run last. Least Cost Last**

More General Cost Functions

- **Let each job j have its own cost function $f_j(C_j)$.**
- **Objective $h_{\max} = \max\{h_1(C_1), \ldots h_n(C_n)\}$.**
- **For $L_{\max}$, we just have that $h_j(C_j) = C_j - d_j$.**

Example

j	p_j	$h_j(C_j)$
1	**1**	$h_1(x) = x$
2	**2**	$h_x(x) = x^2$
3	**3**	$h_3(x) = 0$ **if** $x < 5$**, 10 o.w.**
4	**4**	$h_4(x) = 3$

- **LCL runs in $O(n^2)$ time.**
- **LCL is optimal for $1|prec|h_{\max}$. Proof by exchange argument.**