Previous class
- interval algebra
- point algebra
- quantitative temporal networks
- CSP variables, domains, constraints

heuristics

↓
- "tighten" the domains
- detect inconsistencies early

CSPs are consistency \( O(n^2 d^3) \)

Path consistency

Example

The presentation takes 5 to 10 minutes
The DFA part takes 2-3 minutes

\[ \text{lower bound of the direction between } P_b \text{ and } P_e \]

\[ \text{upper bound} \]

Pb

\( [S, 103] \)

Pe

time point

interval another time point
The entire event takes:
[5, 15]

The session takes:
5 to 15 minutes
[5, 15]
Floyd Warshall's algorithm for shortest paths.

If after running "shortest path" algorithm we have negative distances on the diagonal, it means the network is inconsistent (no solution exists).
Are these equivalent?

1 \begin{array}{c} [30, 40] \\ [60, 80] \end{array} \quad \rightarrow \quad 2 \\
\text{OR} \\
1 \rightarrow 2 \\
1 \rightarrow 4 \\
\begin{array}{c} [30, 40] \\ [60, \infty] \end{array} \\
\text{AND} \\
3 \rightarrow 4 \\
3 \rightarrow 6 \\
\text{No, they are not equivalent. One represents OR other represents AND.}