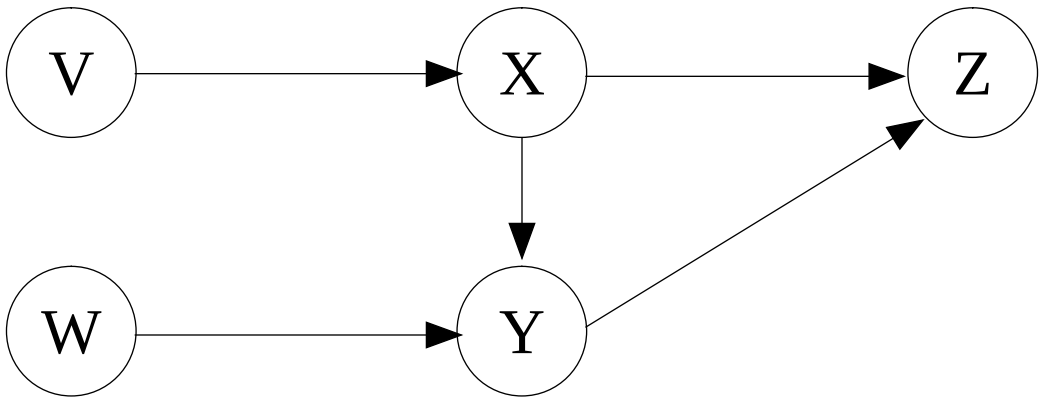
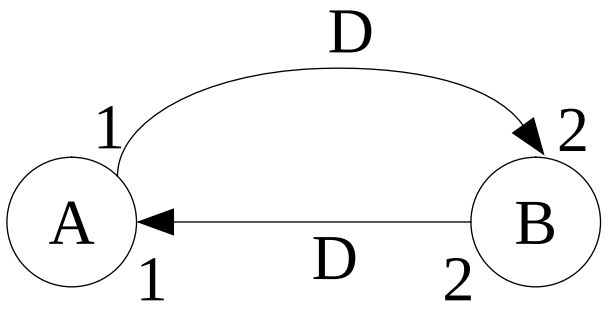
Existence of single appearance schedules



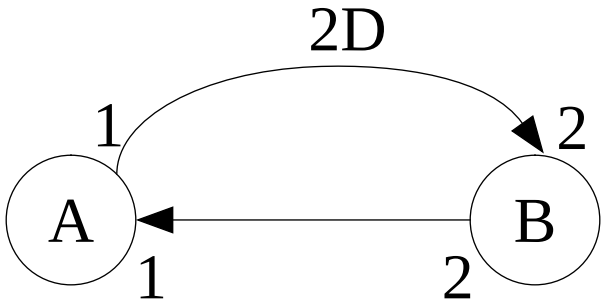
$(q_V\ V)$ $(q_X\ X)$ $(q_W\ W)$ $(q_Y\ Y)$ $(q_Z\ Z)$

Acyclic graphs always have single appearance schedules

Existence of single appearance schedules



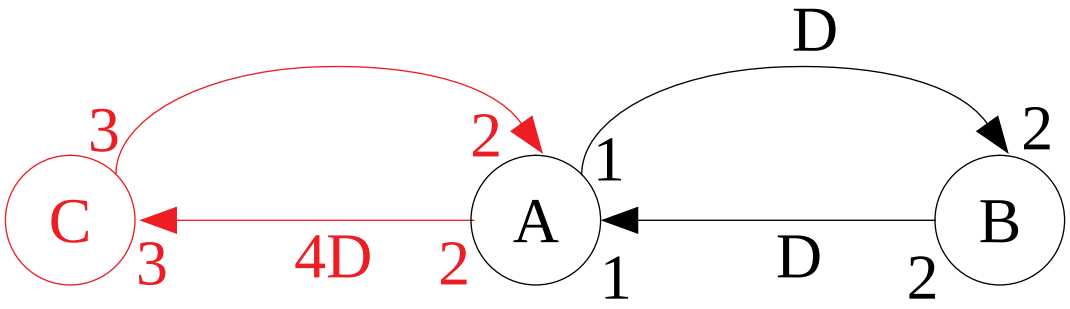
A B A



B (2 A)

Graphs that contain cycles may or may not have single appearance schedules, depending on the delays.

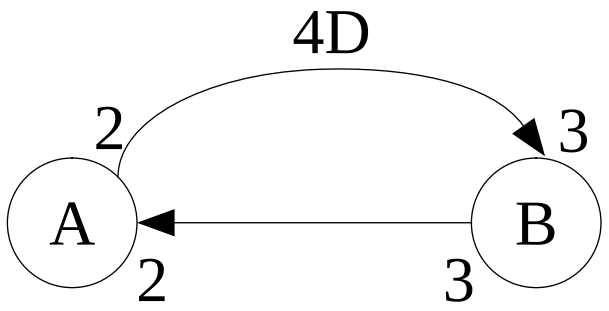
Tight interdependence



Tightly interdependent components

Retiming

Tight interdependence cannot always be eliminated by retiming.



At least 6 delays must reside on one of the arcs for a single appearance schedule to exist.

Scheduling framework for memory minimization

- **Constructs a single appearance schedule whenever one exists.**
- **Actors outside the tightly interdependent components are scheduled with only one appearance.**
- **For actors inside tightly interdependent components, the number of appearances is determined entirely by the *tight scheduling algorithm*.**