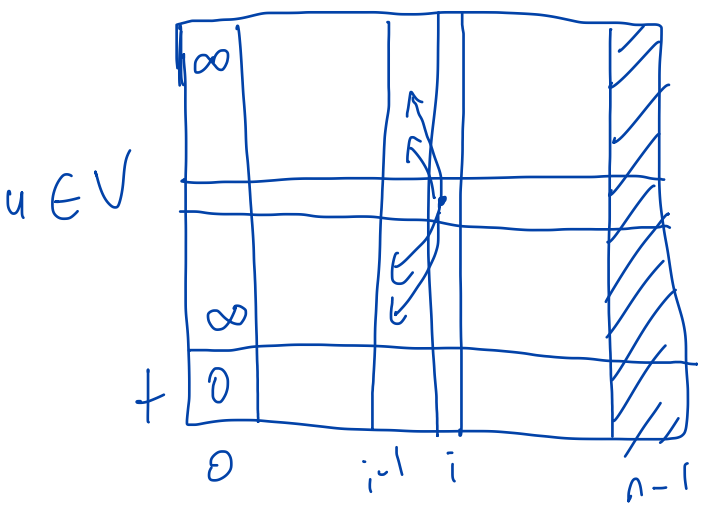
Apr 26

Ordering



$\Rightarrow$ i^{th} column only depends on column $i-1$

$\Rightarrow$ good ordering: column by column (L to R $0, 1, \ldots, n-1$)

Bellman-Ford Algo:

0. Allocate an $n \times n$ matrix M

1. $M[t,0] = 0$, $M[u,0] = \infty \quad \forall u \neq t$

2. for $i = 1 \ldots n-1$

   for $u \in V$

$$M[u,i] = \min \left\{ M[u,i-1], \min_{w:(u,w)\in E} \{ C_{u,w} + M[w,i-1] \} \right\}$$

3. Return $M[s,n-1]$ for $\forall s \in V$

following the graph in Ppt 21 sec

$$M[a,1] = \min\{ M[a,0],$$

$$\min\{ -4 + M[b,0],$$

$$-3 + M[t,0] \} \}$$

$$= \min\{\infty, \min\{-4+\infty, -3\}$$

$$= -3$$