Slack = {0}

Schedule V_{10}

$\lambda = 4$

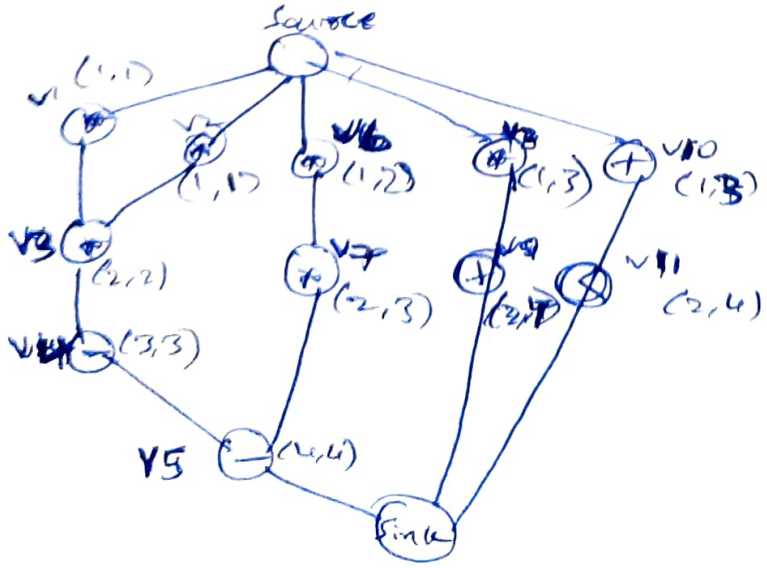
$U_{41} = \{\}$ $\quad T_{41} = \{\}$

$U_{42} = \{V_{11}, V_8\}$ $\quad T_{42} = \{\}$

Slack = {0, 0}

Schedule V_{11}, V_8 $\quad [a_1, a_2] = [2, 2]$

22/2/23



If $\lambda = 4$

(x, y) { ALAP, ASAP

Force Directed List Scheduling :-

- Developed by Paulin & Knight
- Force ≈ Concurrency (# parallel operations in a time stamp)
- Higher the force ⇒ Higher concurrency
- For each node,

Force = self force + Predecessor-Successor Force

* Operation Probability - $P_i(l)$:-

Probability of operation "i" to be scheduled in time stamp "l".

$$P_i(l) = \frac{1}{M_i + 1} \quad \text{for } t_i^{ASAP} \le l \le t_i^{ALAP}$$

$$= 0 \quad \text{, otherwise}$$

$$M_i = t_i^{ALAP} - t_i^{ASAP}$$

└ Mobility of operation "i"

* Type Distribution - $q_k(l)$:-

For each type of resource, in each time stamp, the total Probability is $q_k(l)$

$$q_k(l) = \sum_{\gamma(V_i)=k} P_i(l) \qquad \forall\, l = 1, 2, 3, \ldots, \lambda$$
$$\forall\, k = 1, m, \ldots, n_{res}$$

* Self-Force :-

$$\text{Self-force}(i, l) = \sum_{m=t_i^{ASAP}}^{t_i^{ALAP}} q_k(m)\left(\delta_{im} - P_i(m)\right)$$

$\delta_{im} = 1$ if V_i is scheduled in time stamp "m"

$= 0$ otherwise

$$= \sum_{m=t_i^{ASAP}}^{t_i^{ALAP}} \delta_{im}\, q_k(m) - \sum_{m} q_k(m) \cdot P_{i-}(m)$$

$$= q_k(1) - \frac{1}{\mu_{i+1}} \sum_{m=t_i^{ASAP}}^{t_i^{ALAP}} q_k(m)$$

$$\text{Self force}(1,2) = q_2(2) - \frac{1}{3} \times \left(q_2(2) + q_2(3) + q_2(4) \right)$$

$$= 1 - \frac{1}{3}\left(1 + 2 + \frac{5}{3}\right)$$

$$= -0.55$$