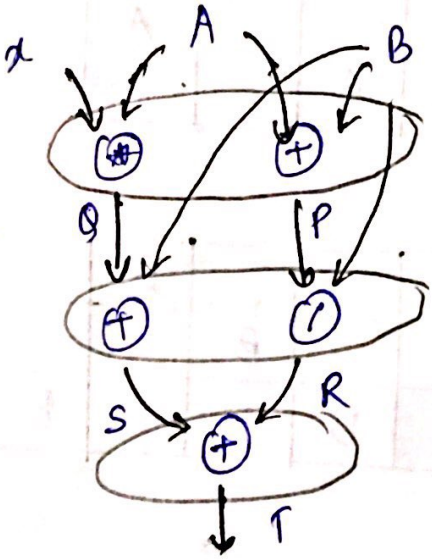
Lecture-7 (AP)
18/02/2019

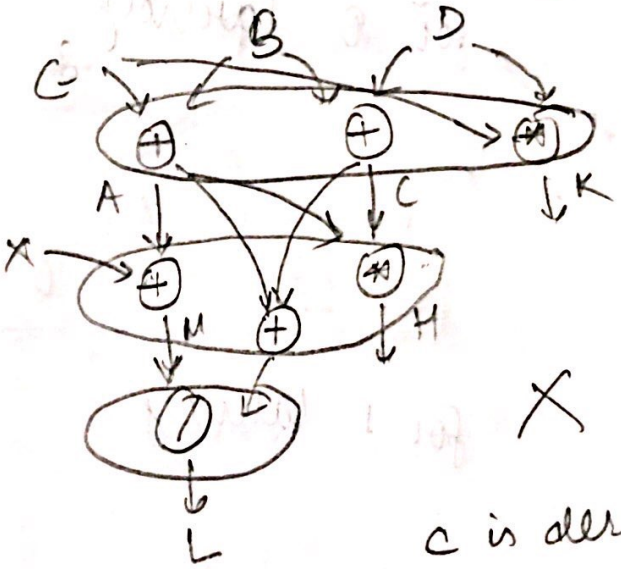
Dataflow computing

1. P = A + B
2. Q = A * x
3. R = P / B
4. S = Q + B
5. T = R + S



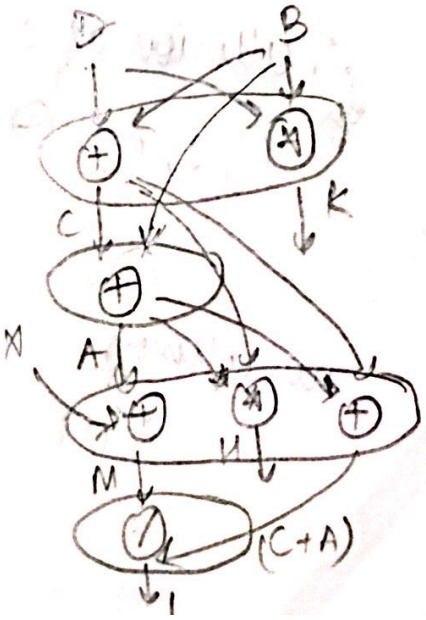
Degree of parallelism = 2

1. A ← B + C
2. C ← D + B
3. M ← A + X
4. H ← A * C
5. L ← (C + A) / M
6. K ← B * D



X

C is derived



✓

Degree of parallelism = 3

Q.

1	2	3	4
A		A	
			A
	A		

			B	
B		B		
	B			B

$FL_{AA} = (2, 0)$

FL_{AB} : (B comes after A)

for 0 latency

A		A	B	
B		B	A	
	AB			B

∴ collision at 0

(, 0)

for 1 latency

A		A		B
	B		AB	
	A	B		

∴ collision at 1

(, 1, 0)

for 2 latency

A		A		
		B	A	B
	A		B	

no collision

(, 1, 0)

for 3 latency

$FL_{AB} = (3, 1, 0)$

FL_{BA}

for 0 latency → collision

A		A	B	
B		B	A	
	AB			B

(,0)

for 1 latency → collision

(,1, 0)

for 2 latency → no collision

(,1, 0)

for 3 latency → collision

(3,1,0)

$FL_{BB} = (3, 2, 0)$

$C_{AA} = 0101$

$C_{AB} = 1011$

$C_{BA} = 1011$

$C_{BB} = 1101$

$M_A \begin{bmatrix} 0101 \\ 1011 \end{bmatrix}$ $M_B \begin{bmatrix} 1011 \\ 1101 \end{bmatrix}$