Lecture-5 (AP)
07/02/2019

f(A)
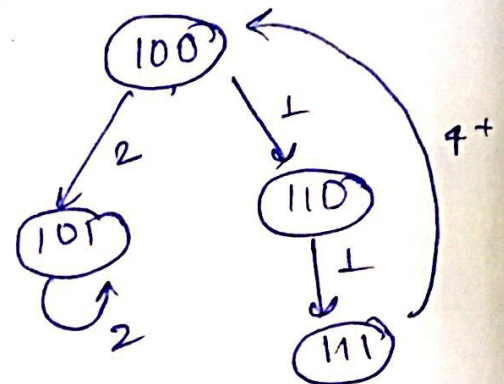
	1	2	3	4	5
S_1	A			A	
S_2		A			A
S_3			A		

f(B)

S_1		B			B
S_2				B	
S_3	B		B		

Forbidden latency = (3)

C = 100

PLC = {(2), (1, 1, 4)}

Avg. latency = {2, 2}

MAL = 2

MAL → cannot be less than $\frac{no. \text{ of tasks}}{↓}$ in a stage.

lower bound

upper-bound : no. of cycles (here 5)

When considering both together :
four cases possible :
  • A comes after A
  • B comes after A
  • A comes after B
  • B comes after B

If A comes after A
$$FL_{AA} = (3, 0)$$

Now, if B comes after A
for 0 latency :

A	B		A	
	A			A
B		A̲B̲		

∴ collision at 0
∴ $FL_{AB} = (\ , 0)$

for 1 latency

A		B	A	
	A			A̲B̲
	B	A	B	

∴ collision at 1
∴ $FL_{AB} = (1, 0)$

for 2 latency

A			A	
	A			A
		A̲B̲		

∴ collision at 2
∴ $FL_{AB} = (2, 1, 0)$

for 3 latency

A			A	B
	A			A
	A	B		

∴ no collision at .
∴ $FL_{AB} = (3, 4, 0)$

Similarly

$$FL_{BA} = (4, 2, 1, 0)$$

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

Now collision vectors

$$C_{AA} = 1001$$

$$C_{AB} = 0111$$

$$C_{BA} = 10111$$

$$C_{BB} = 01101$$