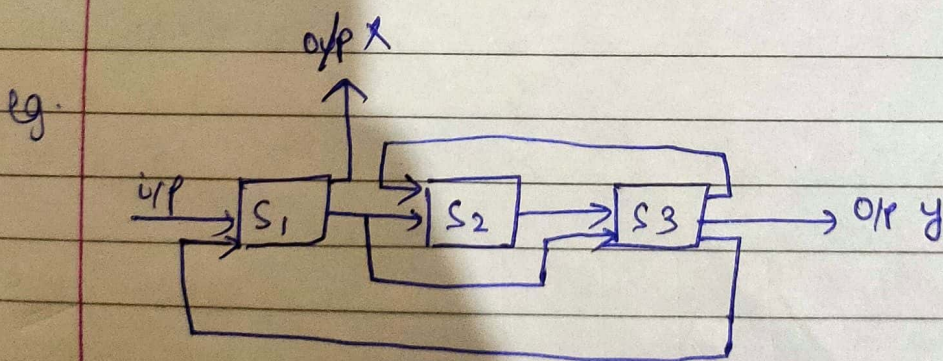
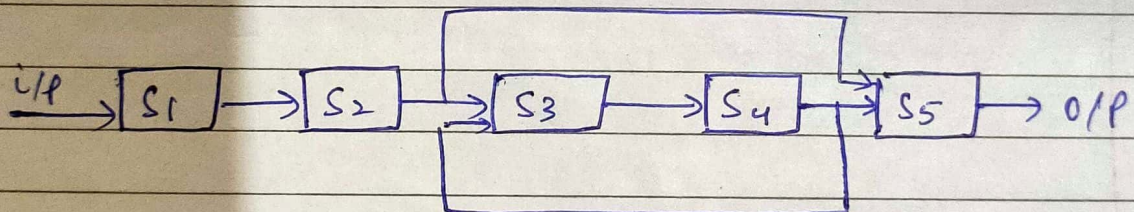


Non-linear pipeline

Reservation Table

	T_1	T_2	T_3	T_4	T_5
S_1	X				
S_2		X			
S_3			X		
S_4				X	
S_5					X



For X,

	1	2	3	4	5	6	7	8
S_1	X					X		X
S_2		X		X				
S_3			X		X		X	

For Y,

	1	2	3	4	5	6
S ₁	X				X	
S ₂			X			
S ₃		X		X		X

Permissible latency \Rightarrow collision does not occur
 Forbidden latency \Rightarrow collision occurs

Initial collision vector

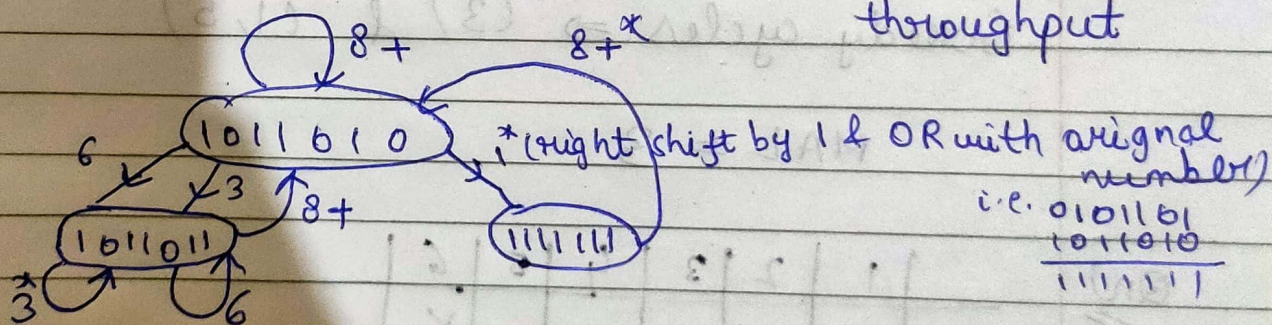
For X,

7 6 5 4 3 2 1

1 0 1 1 0 1 0

(1 for forbidden, 0 for permissible)

MAL (minimum average latency) = $\frac{1}{\text{throughput}}$



Greedy cycle \Rightarrow mark minimum edges on each node (*)
 & then form cycles from those ~~nodes~~ edges

greedy cycles \Rightarrow (3) & (1 \rightarrow 8)

MAL \Rightarrow 3

For Y

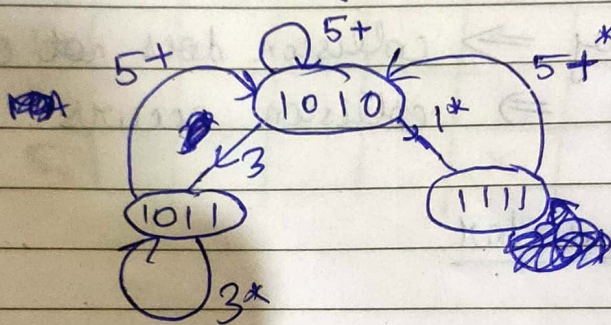
Forbidden $\Rightarrow 2, 4$

Permissible $\Rightarrow 1, 3, 5$

Initial collision vector,

\Rightarrow

4	3	2	1
1	0	1	0



Note:- only take those edges which represent 0. eg. $1011 \Rightarrow 3$ & $5+$ since for 1, 2 & 4 there are 1.

Greedy cycles $\Rightarrow (3, 1)$ & $(1, 5)$

MAL = 3

Qn)

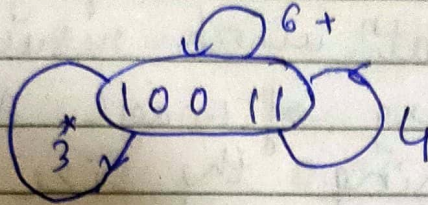
	1	2	3	4	5	6
S ₁	X					X
S ₂		X		X		
S ₃			X			
S ₄				X	X	

Forbidden = 1, 2, 5

Permissible = 3, 4, 6 +

Initial collision vector,

5 4 3 2 1
1 0 0 1 1



MAL \Rightarrow 3

00010
10011

10011

00001
10011

10011