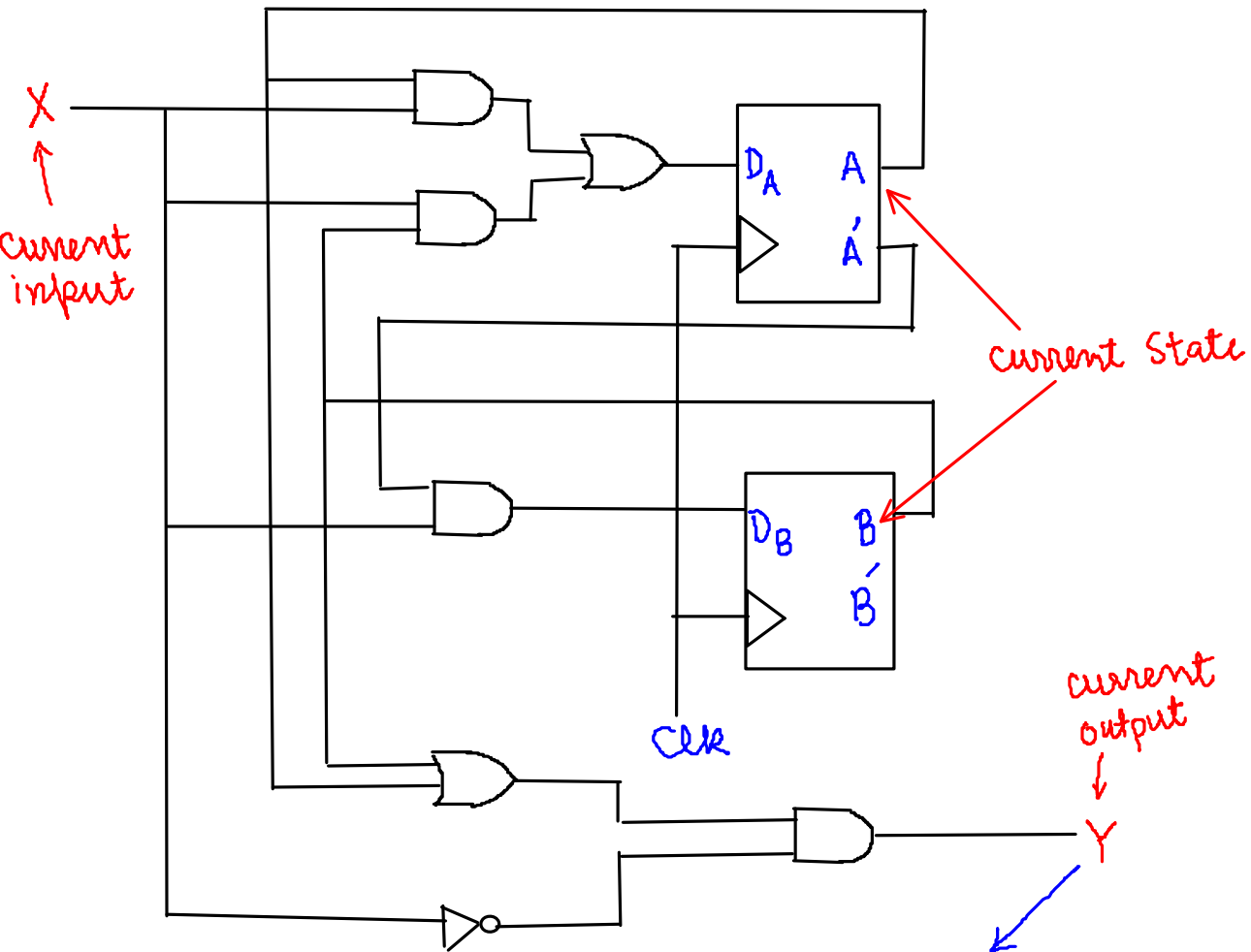


# Sequential Circuit Analysis



depends on current state as well as input

(Mealy Machine or Mealy Model)

FF Input

$$D_A = AX + BX$$

$$D_B = \bar{A}X$$

Current Output

$$Y = (A + B)\bar{X}$$

↑ ↑ ↑  
current state current input

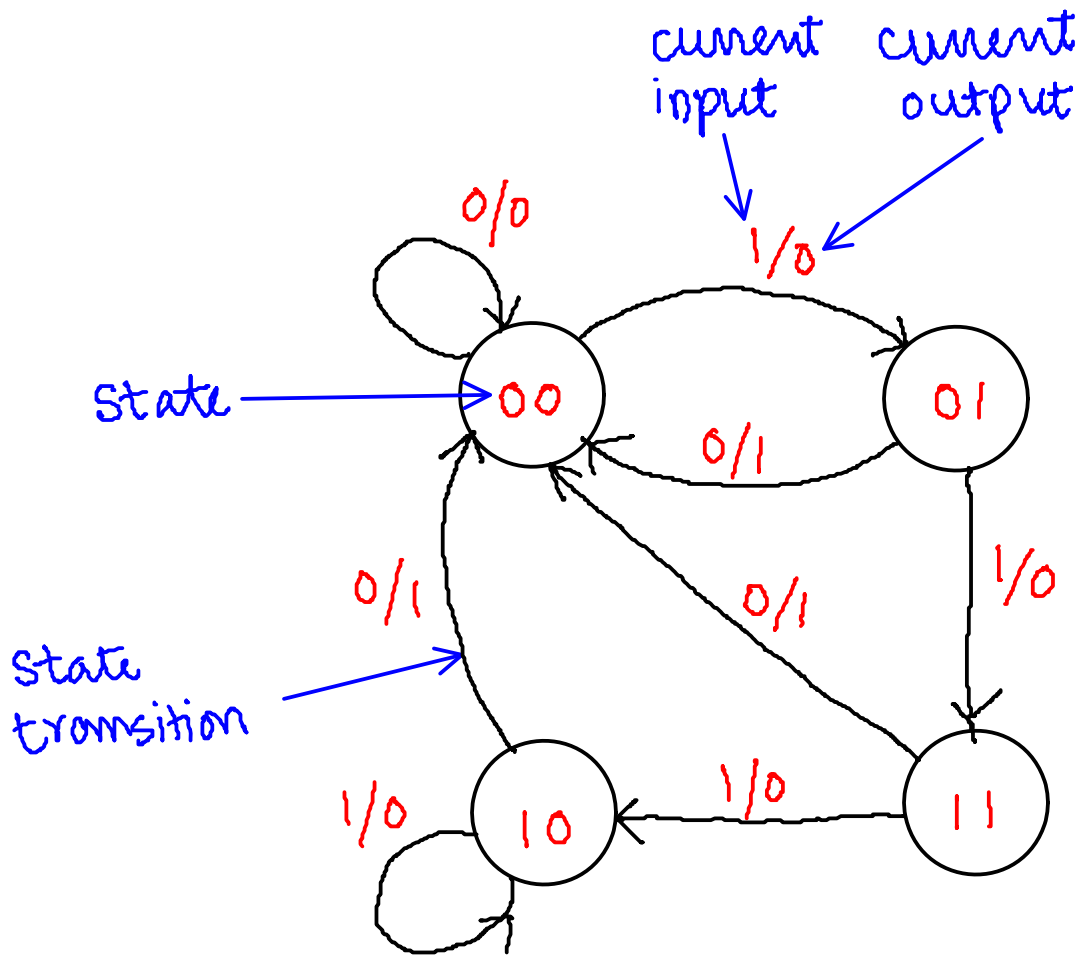
FF next state

$$A^+ = D_A$$

$$B^+ = D_B$$

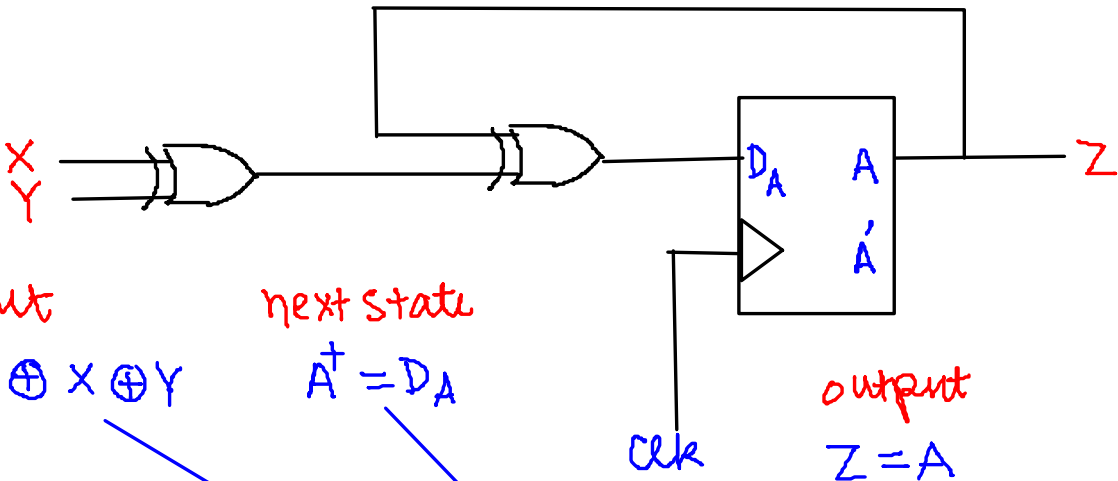
current

FF state			input		FF input		next		output
A	B	X	D <sub>A</sub>	D <sub>B</sub>	A <sup>+</sup>	B <sup>+</sup>	A <sup>+</sup>	B <sup>+</sup>	Y
0	0	0	0	0	0	0	0	0	
0	0	1	0	1	0	1	0	1	
0	1	0	0	0	0	0	0	1	
0	1	1	1	1	1	1	1	0	
1	0	0	0	0	0	0	0	1	
1	0	1	1	0	1	0	1	0	
1	1	0	0	0	0	0	0	1	
1	1	1	1	0	1	0	1	0	



State Graph

Example 2



FF input

$$D_A = A \oplus X \oplus Y$$

next state

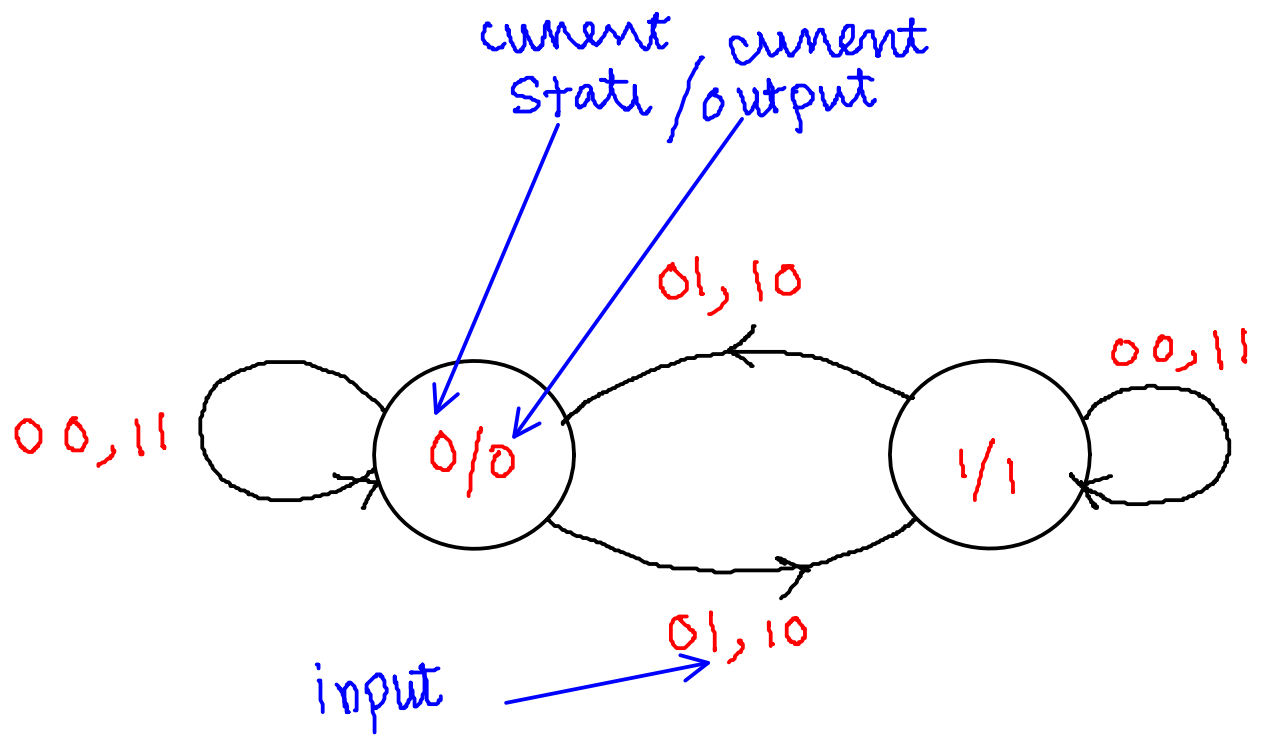
$$A^+ = D_A$$

output

$$Z = A$$

A	X	Y	$D_A$	$A^+$	Z
0	0	0	0	0	0
0	0	1	1	1	0
0	1	0	1	1	0
0	1	1	0	0	0
1	0	0	1	1	1
1	0	1	0	0	1
1	1	0	0	0	1
1	1	1	1	1	1

output depends on state only (not on input)  
 Moore Machine or Moore Model



State Graph

