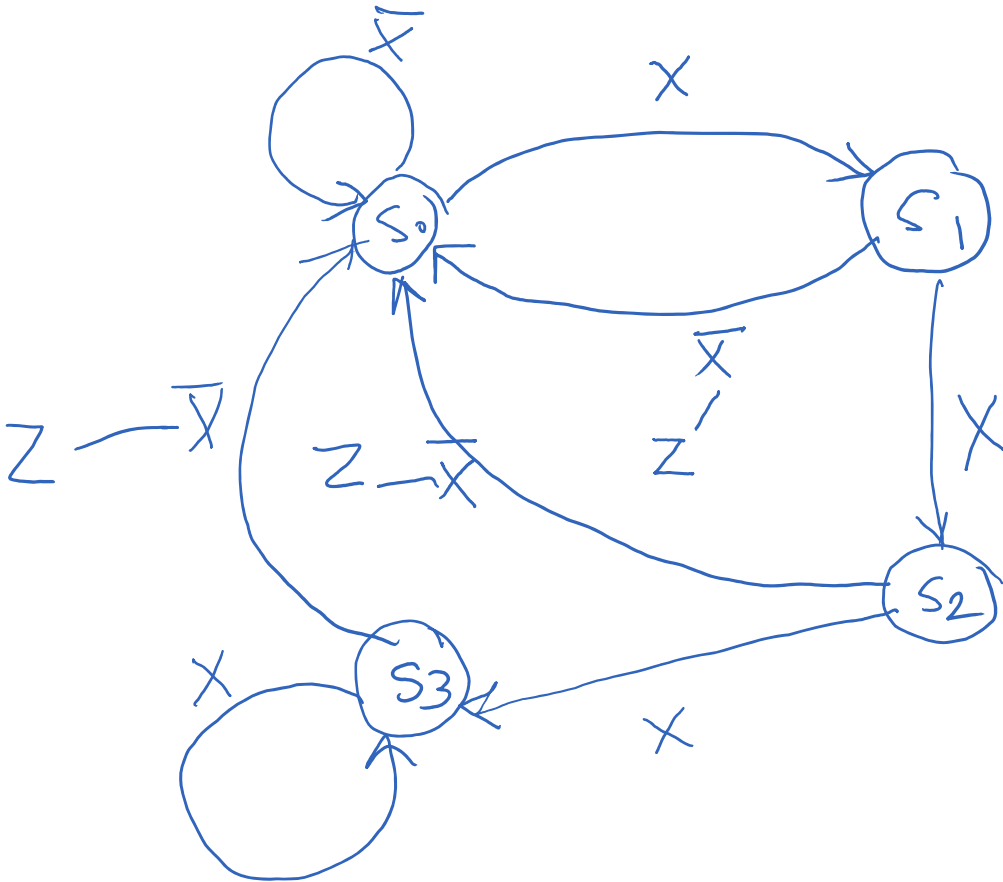


1) Continued ...



1) Continued ...

State	state code	TC	Next State	Next State Code	Non output
S_0	1000	\bar{X}	S_0^+	1000	
S_0	1000	X	S_1^+	0100	
S_1	0100	\bar{X}	S_0^+	1000	Z
S_1	0100	X	S_2^+	0010	
S_2	0010	X	S_3^+	0001	
S_2	0010	\bar{X}	S_0^+	1000	Z
S_3	0001	X	S_3^+	0001	
S_3	0001	\bar{X}	S_0^+	1000	Z

$$D_{S_0^+} = S_0^+ = S_0 \cdot \bar{X} + S_1 \cdot X + S_2 \cdot \bar{X} + S_3 \cdot \bar{X}$$

$$= (S_0 + S_1 + S_2 + S_3) \cdot \bar{X} = \bar{X}$$

$$D_{S_0^+} = \bar{X}$$

$$D_{S_1^+} = S_1^+ = S_0 \cdot X$$

$$D_{S_1^+} = S_0 \cdot X$$

1) Continued ...

$$D_{s_2} = S_2^+ = S_1 \cdot X$$

$$D_{s_2} = S_1 X$$

$$D_{s_3} = S_3^+ = S_2 \cdot X + S_3 \cdot X = (S_2 + S_3) X$$

$$D_{s_3} = (S_2 + S_3) X$$

output

$$Z = S_1 \cdot \bar{X} + S_2 \cdot \bar{X} + S_3 \cdot \bar{X} = (S_1 + S_2 + S_3) \cdot \bar{X}$$

$$Z = (S_1 + S_2 + S_3) \bar{X}$$

$$Z = (S_1 + S_2 + S_3) \bar{X}$$

$$\begin{aligned}
 D_{S_0} &= \bar{X} \\
 D_{S_1} &= S_0 X \\
 D_{S_2} &= S_1 X \\
 D_{S_3} &= (S_2 + S_3) X
 \end{aligned}
 \left. \vphantom{\begin{aligned} D_{S_0} \\ D_{S_1} \\ D_{S_2} \\ D_{S_3} \end{aligned}} \right\} \text{FF input equations}$$

$$Z = (S_1 + S_2 + S_3) \bar{X} \left. \vphantom{Z} \right\} \text{output equation}$$

