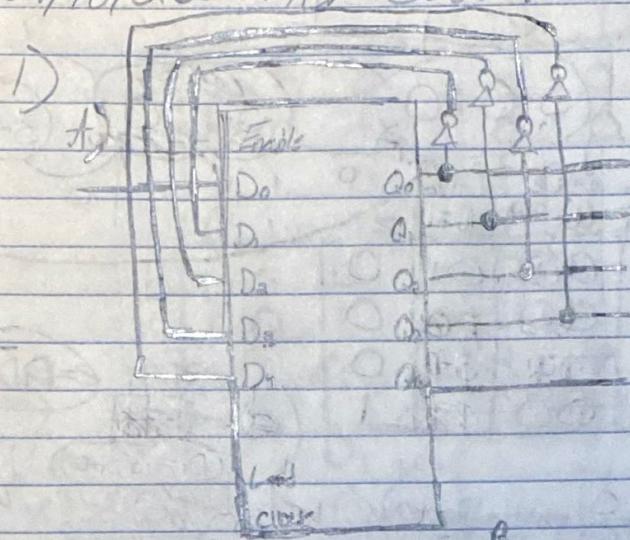
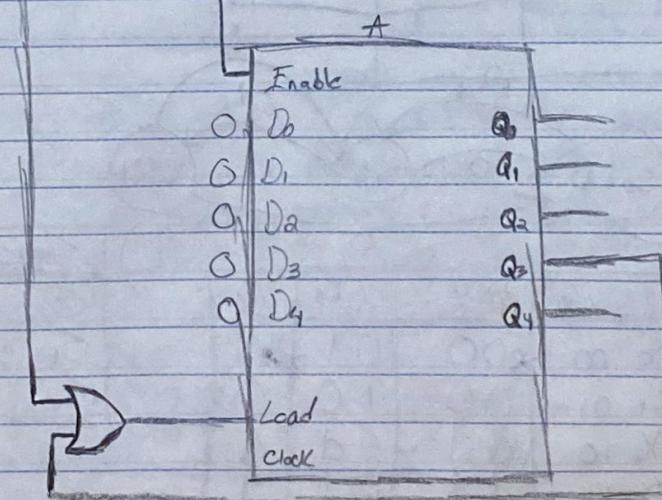
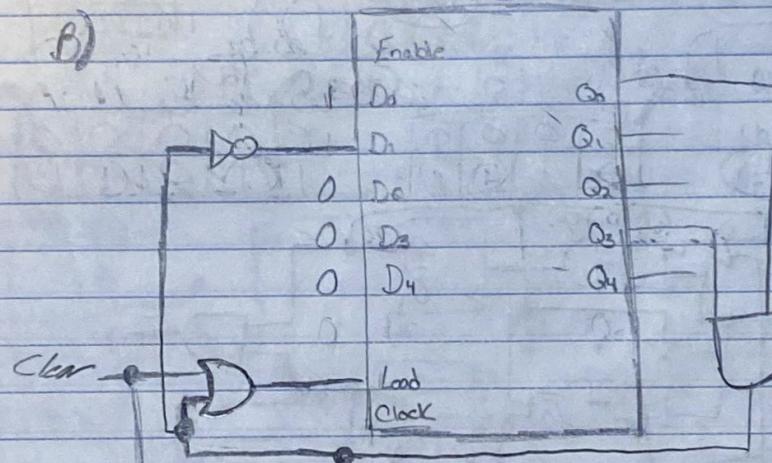


Bonwell  
04/10/22 Homework #8



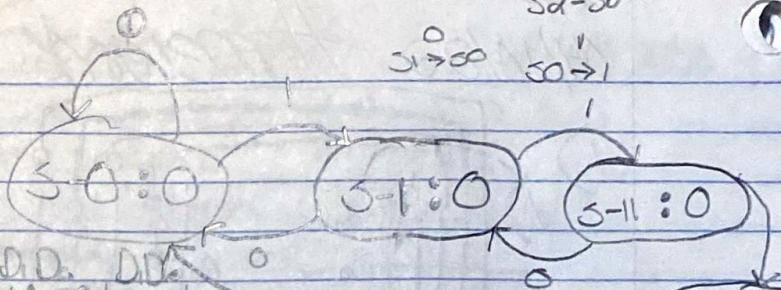
11000



$$\begin{array}{l} S_2 = S_1 \\ S_2 = S_0 \\ S_1 = \infty \\ S_0 \rightarrow 1 \end{array}$$

2)

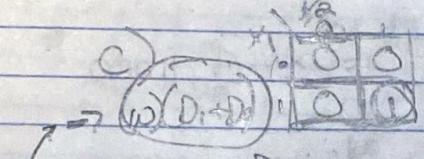
a)



b)

	$D.D_1$	$D.D_0$	$w$	$x_1$	$y_1$	$w = 0$	$w = 1$	$z$
$00 = S-0$	S-0:00	00	01	0				
$01 = S-1$	S-1:01	00	10	0				
$10 = S-11$	S-11:10	00	11	0				
$11 = S-111$	S-111:11	00	11	1				

c)



$$D_1 = w(D_1 + D_0)$$

$$D_0 = \overline{w}(D_1 + D_0) \Rightarrow w(D_1 + \overline{D}_0)$$

$w$	00	01	10	11
0	00	01	00	00
1	01	10	11	11

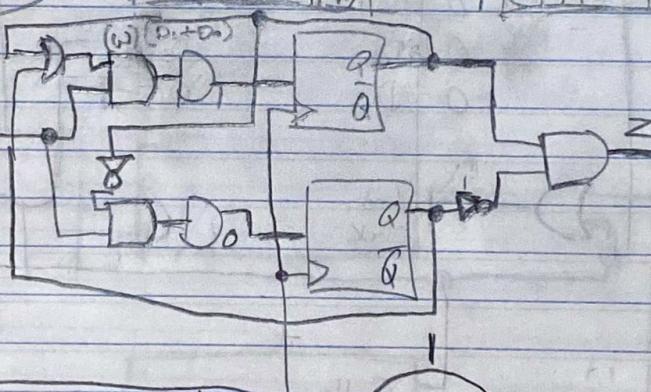
$w$	00	01	11	10
0	00	01	11	10
1	01	10	10	00

$$\begin{aligned} D_1 &= \overline{x_2} \\ D_0 &= \overline{w} D_1 \end{aligned}$$

$$\begin{aligned} D_1 &= w(D_1 + D_0) \\ D_0 &= \overline{w} D_1 \end{aligned}$$

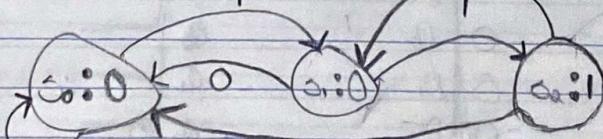
$$\begin{aligned} D_1 &= w(D_1 + D_0) \\ D_0 &= \overline{w} D_1 \end{aligned}$$

c)



CK

3) a)



c)

$x_2y_1$	$D_1$	$D_0$	$D_1, D_0$	$Q$
00 00	00	00	01	0
01 01	00	00	10	0
X 10	dd	dd	dd	d
11 11	1	1	01	1

b)

Start	$w=0$	$w=1$	$Q$
S0	S0	S1	0
S1	S0	S2	1
S2	S0	S1	0

d)

$P$	$y_0$	$y_1$	$D_1$	$D_0$
0	0	0	0	0
0	0	1	0	0
0	1	0	d	d
0	1	1	1	1
1	0	0	0	1
1	0	1	1	0
1	1	0	d	d

e)

$$\begin{array}{|c|c|} \hline Q & \\ \hline X_1 & X_2 \\ \hline 0 & 0 \\ 0 & d \\ 1 & 0 \\ \hline \end{array}$$

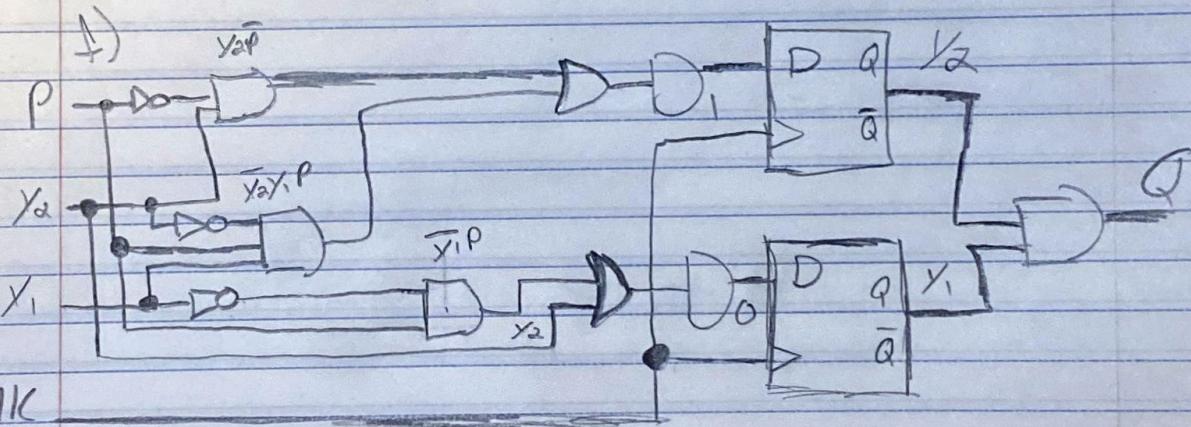
$$\begin{array}{|c|c|} \hline D_1 & Y_2 Y_1 \\ \hline 0 & 00 01 11 10 \\ 0 & 00 01 11 10 \\ 1 & 00 01 11 10 \\ \hline \end{array}$$

$$\begin{array}{|c|c|} \hline D_0 & Y_2 Y_1 \\ \hline 0 & 00 01 11 10 \\ 0 & 00 01 11 10 \\ 1 & 11 01 11 10 \\ \hline \end{array}$$

$$Q = Y_2 Y_1$$

$$D_1 = \bar{Y}_2 Y_1 P + Y_2 \bar{P}$$

$$D_0 = \bar{Y}_1 P + Y_2$$



Not sure I did it correctly, because I don't recognize it. Maybe a master-slave D-Hip-Hop, because of the two D flip-flops?

