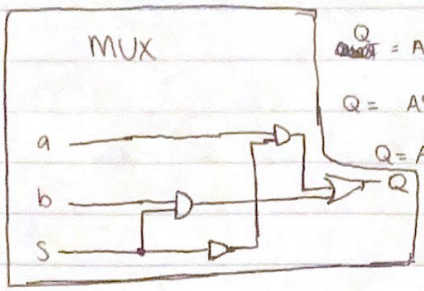
MUX



$Q = AB'S' + AB'S + A'BS + ABS$

$Q = AS'(B+B') + BS(A+A')$

$Q = AS' + BS$

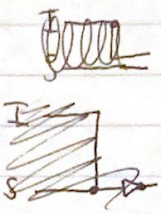
A	B	S	Q
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

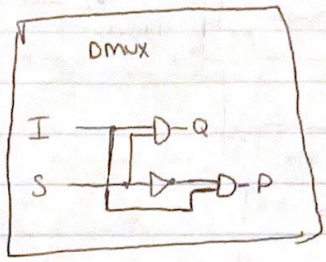
DMUX

I	S	P	Q
0	0	0	0
1	0	1	0
0	1	0	0
1	1	0	1

$P = IS'$

$Q = IS$



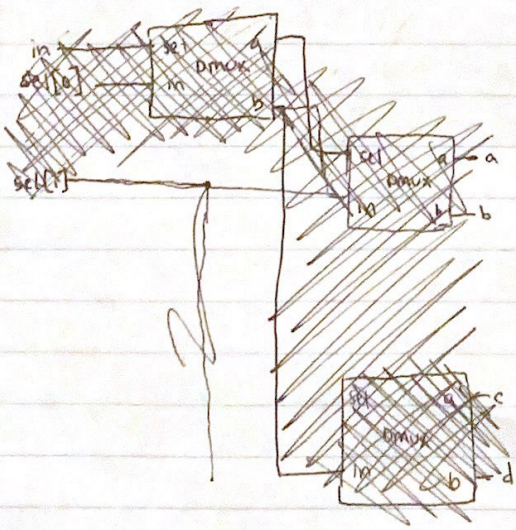


MUX16

Same as MUX, but 16 times

DMUX4WAY

IN	SEL	A	B	C	D
0	0 0	0	0	0	0
0	0 1	0	0	0	0
0	1 0	0	0	0	0
0	1 1	0	0	0	0
1	0 0	1	0	0	0
1	0 1	0	1	0	0
1	1 0	0	0	1	0
1	1 1	0	0	0	1



$A = IN(SEL[1])'(SEL[0])'$

$B = IN(SEL[1])'(SEL[0])$

→ DMUX IF sel[0] is 0 $(0,1)_{10}$

$C = IN(SEL[0])(SEL[0])'$

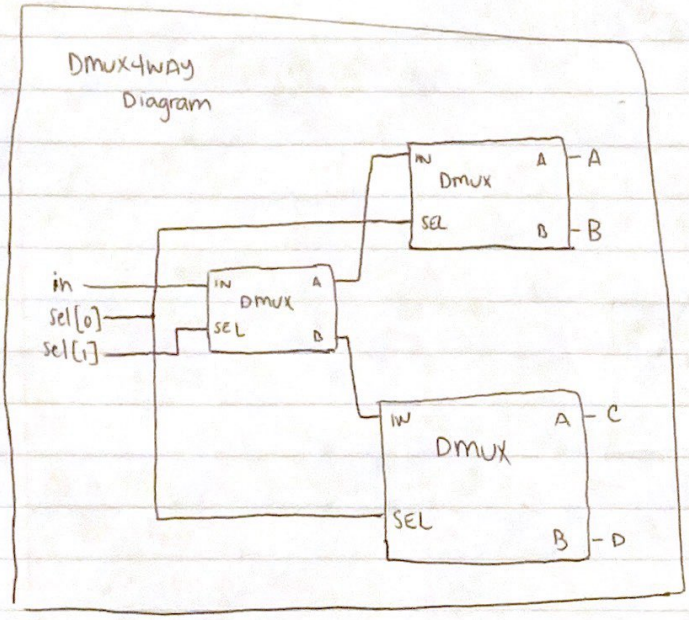
$D = IN(SEL[0])(SEL[0])$

→ DMUX IF sel[0] is 1 $(2,3)_{10}$

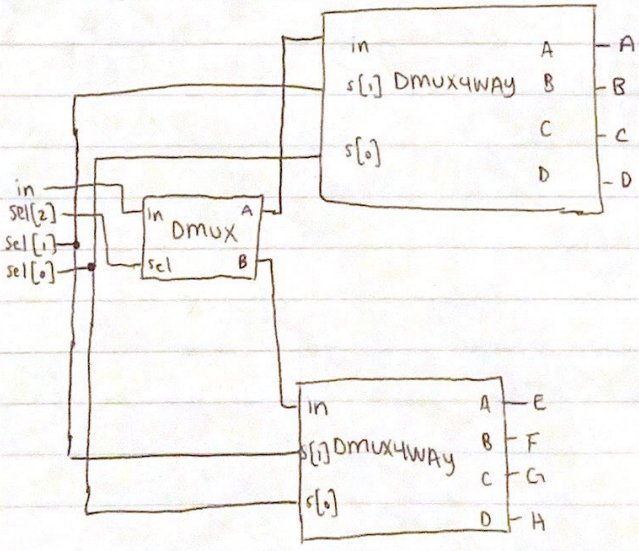
!!! ∴ SWAP INDEXES

☆ Diagram on next page

DMUX4WAY
Diagram



DMUX8WAY:
(Diagram only)



Mux4Way16

(Diagram Only)