

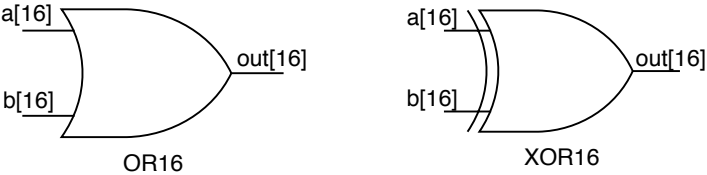
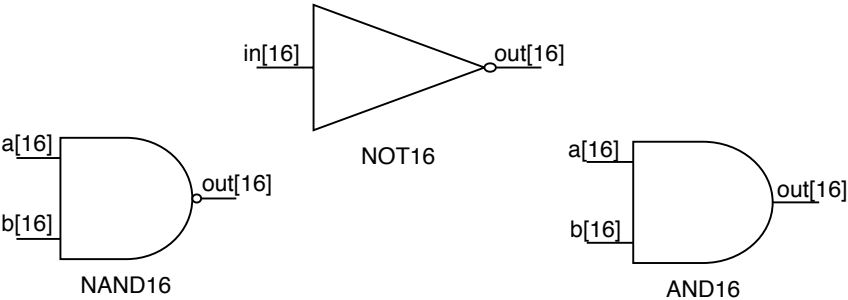
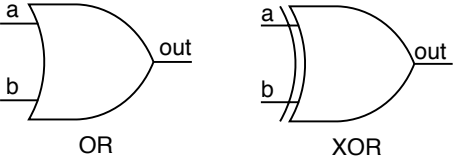
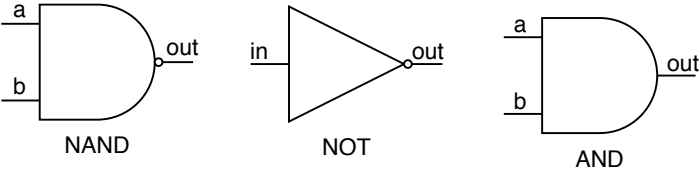
Homework #2

CS220 - Computer Architecture

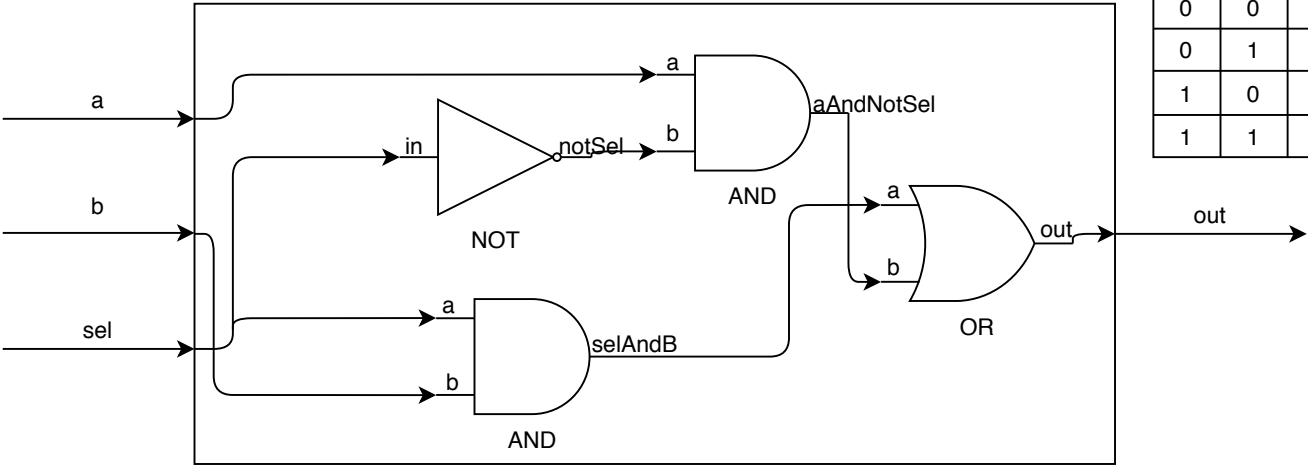
Author: Blake Dowling

Last Modified: 9/10/20

LEGEND:



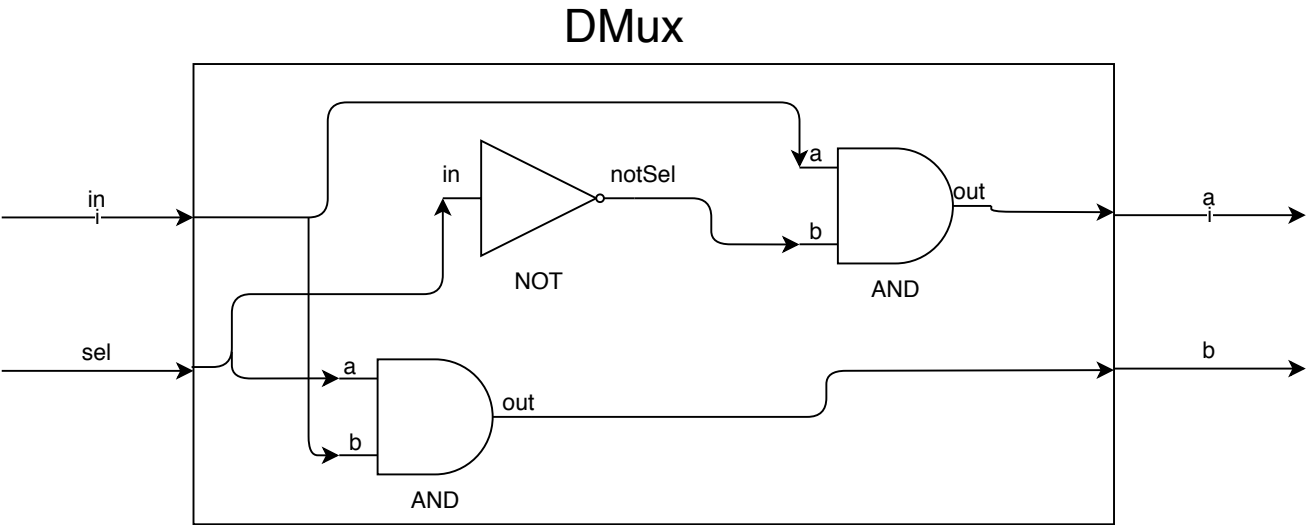
Mux



a	b	sel	out
0	0	0	0
0	1	0	0
1	0	0	1
1	1	0	1
0	0	1	0
0	1	1	1
1	0	1	0
1	1	1	1

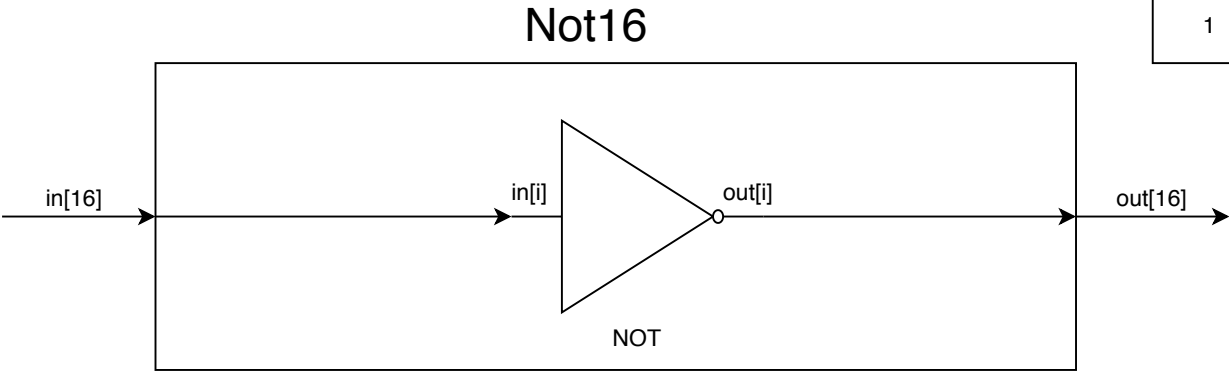
in	sel	a	b
0	0	0	0
1	0	1	0
0	1	0	0
1	1	0	1

1	1	0	1
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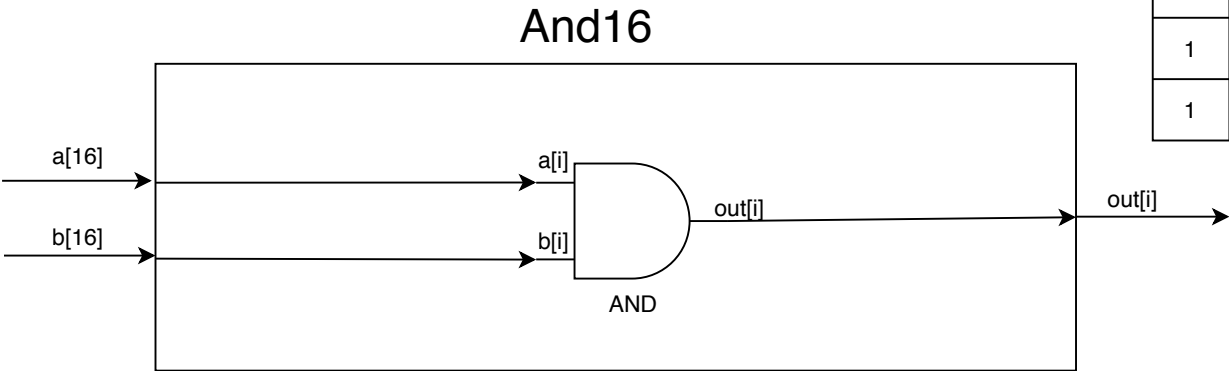
(Let $i = 0, \dots, 15$).

in[i]	out[i]
0	1
1	0



(Let $i = 0, \dots, 15$).

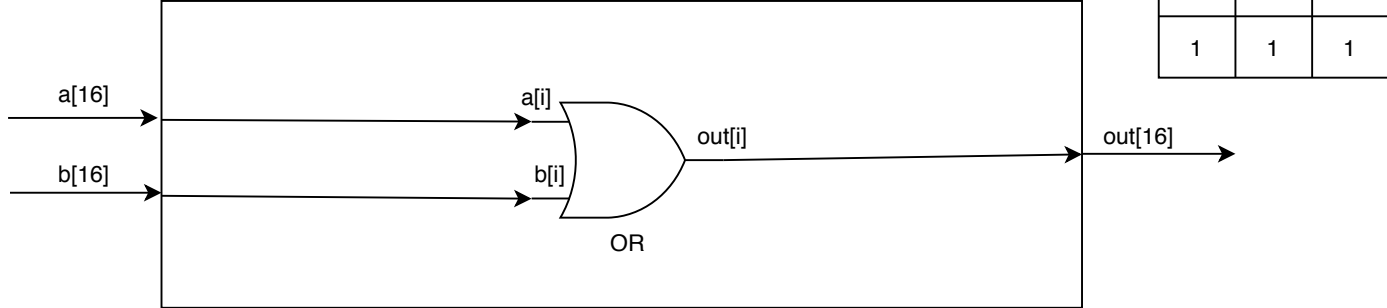
a[i]	b[i]	out[i]
0	0	0
0	1	0
1	0	0
1	1	1



(Let $i = 0, \dots, 15$).

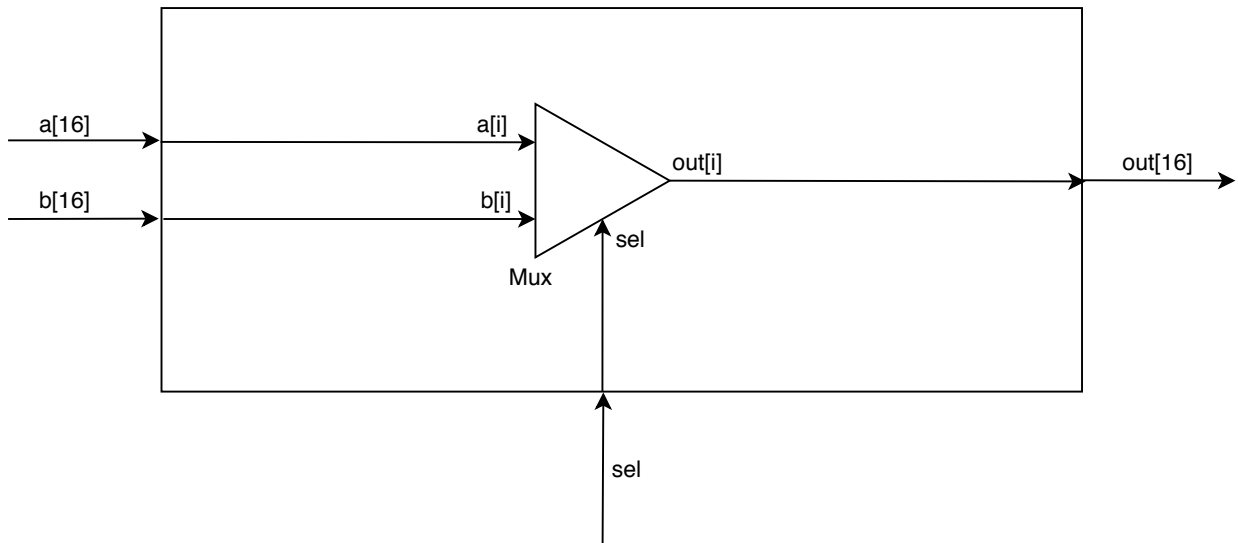
a[i]	b[i]	out[i]
0	0	0
0	1	1
1	0	1

Or16

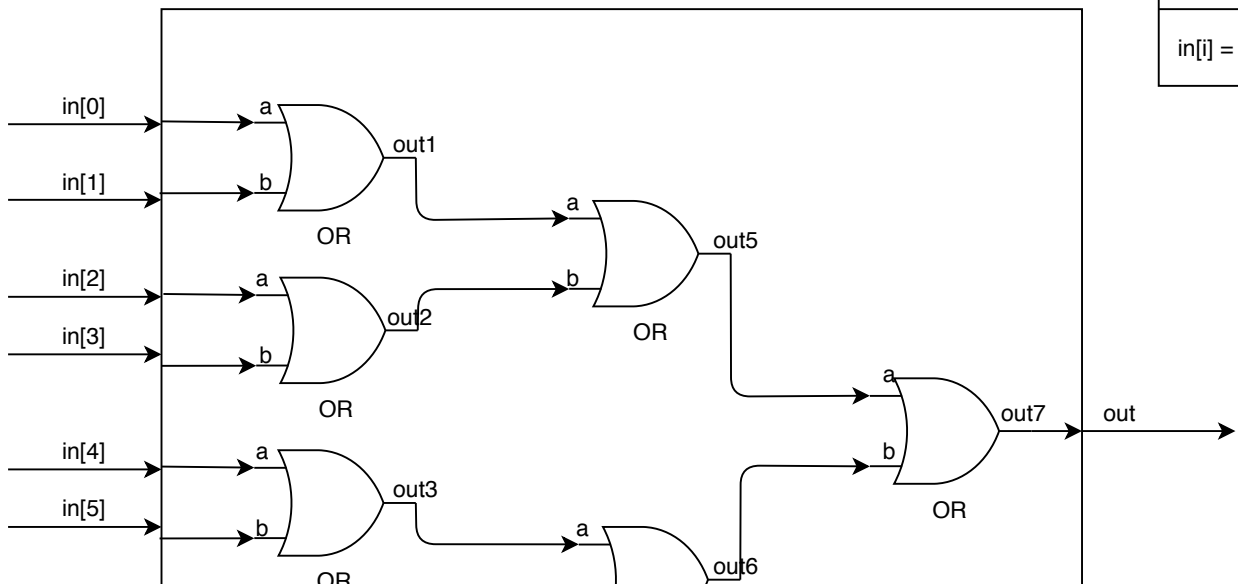


a	b	sel	out
a	b	0	a
a	b	1	b

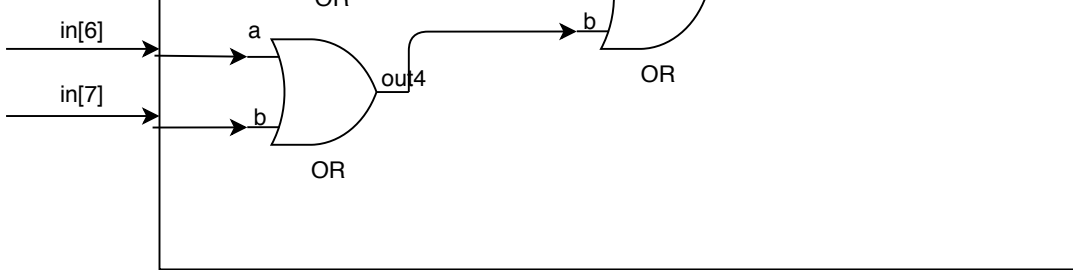
Mux16



Or8Way

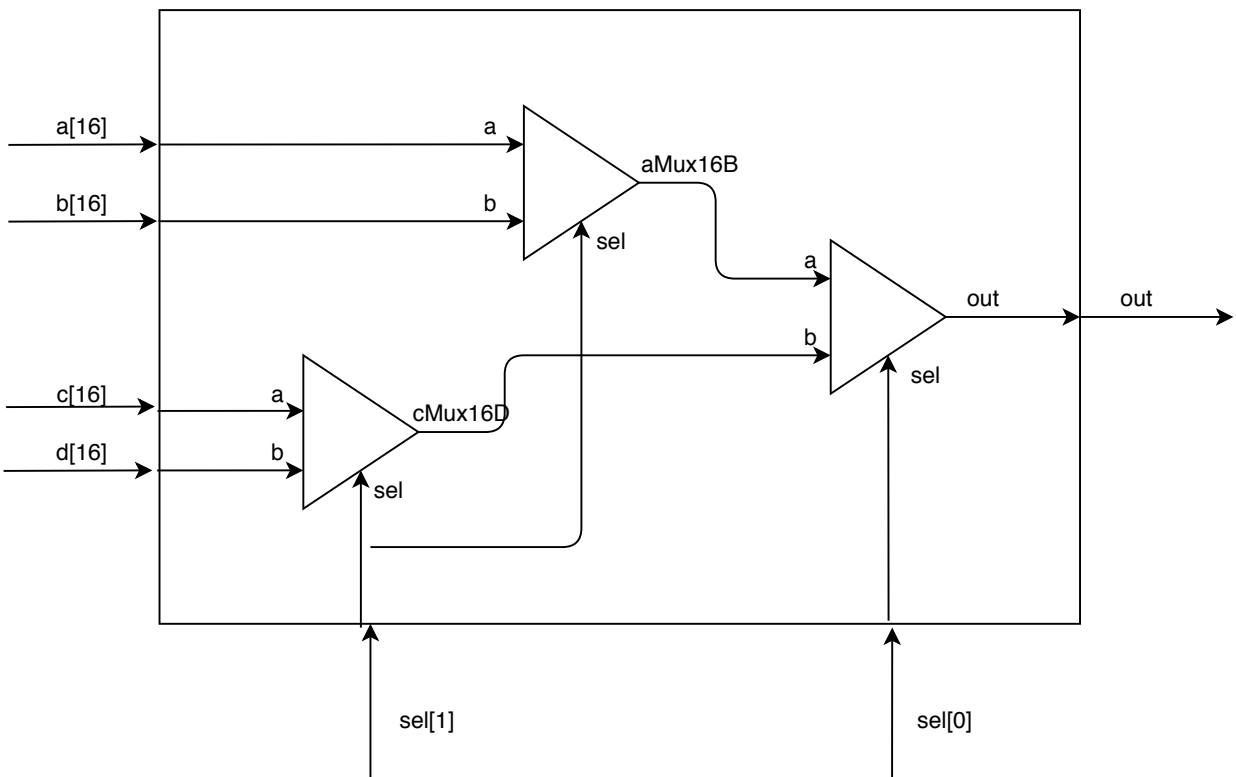


in	out
$in[0, \dots, 7] = 0$	0
$in[i] = 1$	1



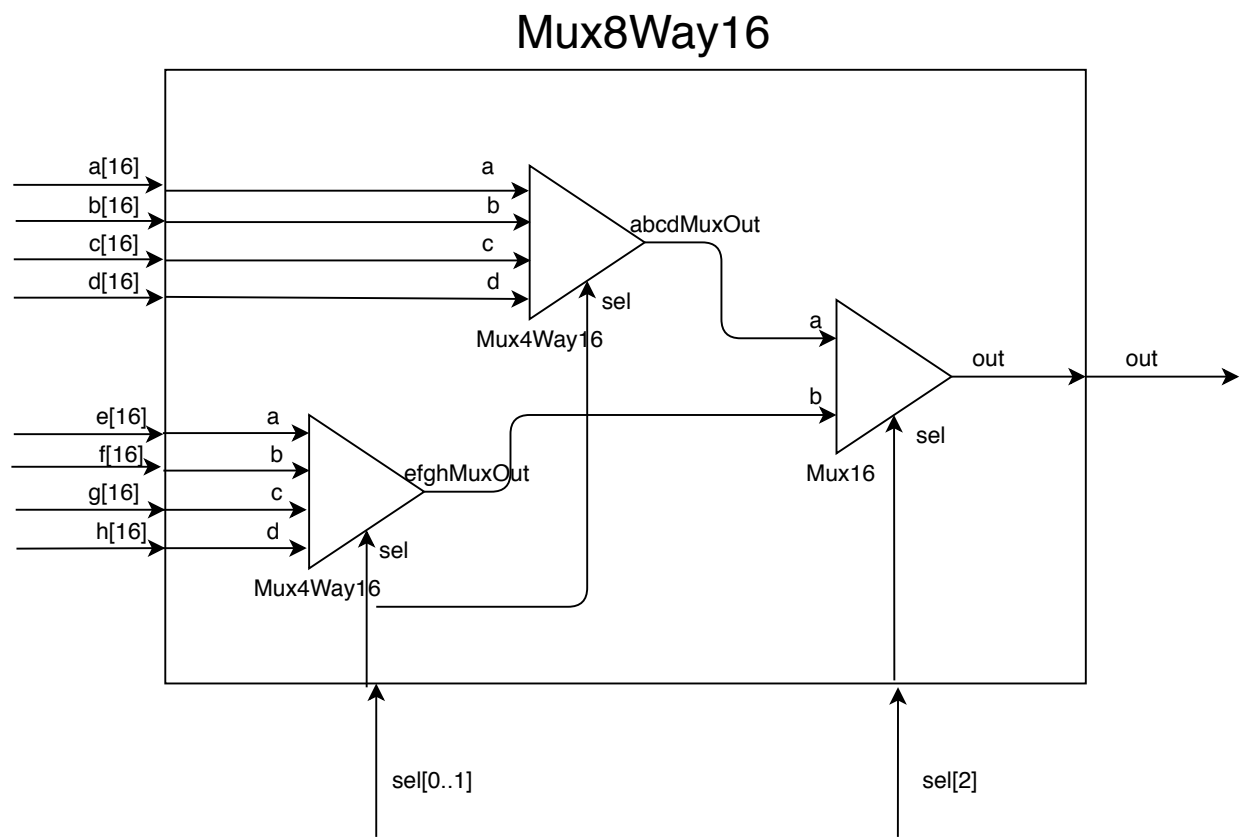
a	b	c	d	sel	out
a	b	c	d	00	a
a	b	c	d	01	b
a	b	c	d	10	c
a	b	c	d	11	d

Mux4Way16

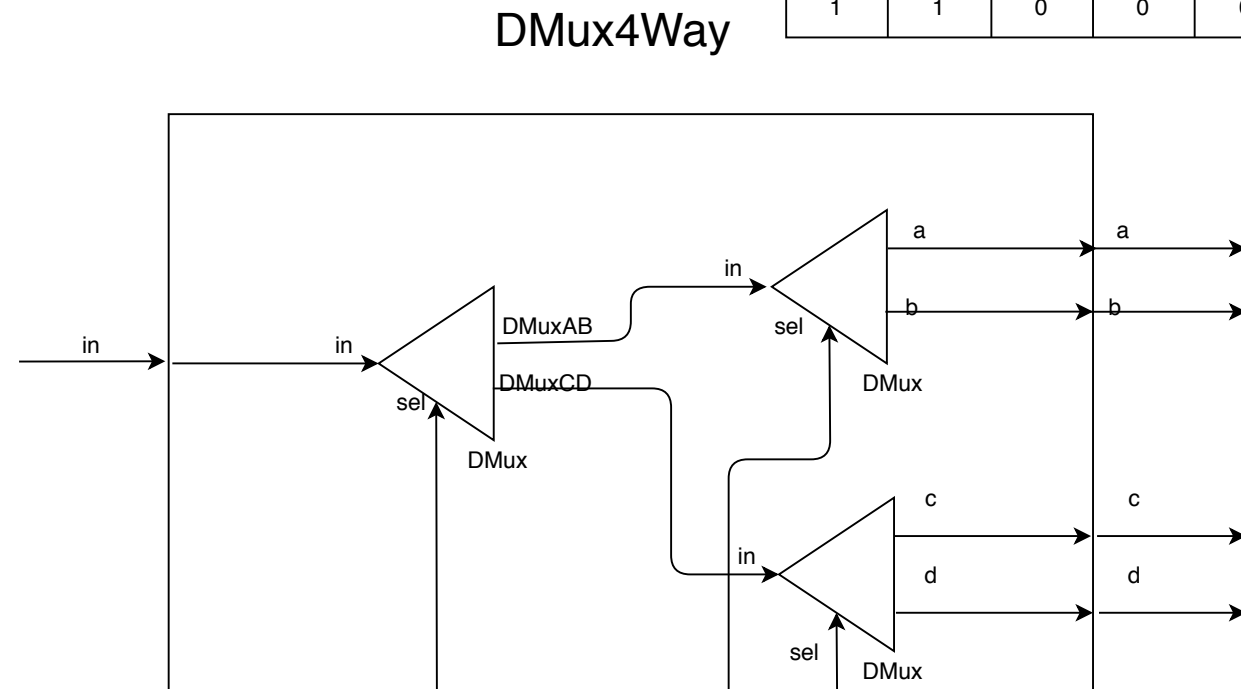


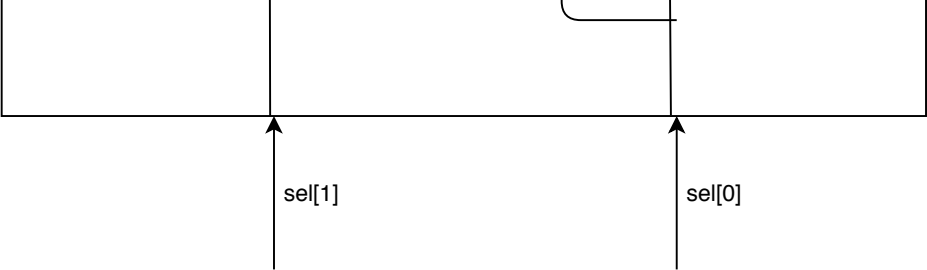
a	b	c	d	e	f	g	h	sel	out
a	b	c	d	e	f	g	h	000	a
a	b	c	d	e	f	g	h	001	b
a	b	c	d	e	f	g	h	010	c
a	b	c	d	e	f	g	h	011	d
a	b	c	d	e	f	g	h	100	e
a	b	c	d	e	f	g	h	101	f
a	b	c	d	e	f	g	h	110	g
a	b	c	d	e	f	g	h	111	h

a	b	c	d	e	f	g	h	101	f
a	b	c	d	e	f	g	h	110	g
a	b	c	d	e	f	g	h	111	h



sel[1]	sel[0]	a	b	c	d
0	0	in	0	0	0
0	1	0	in	0	0
1	0	0	0	in	0
1	1	0	0	0	in





sel[2]	sel[1]	sel[0]	a	b	c	d	e	f	g	h
0	0	0	in	0	0	0	0	0	0	0
0	0	1	0	in	0	0	0	0	0	0
0	1	0	0	0	in	0	0	0	0	0
0	1	1	0	0	0	in	0	0	0	0
1	0	0	0	0	0	0	in	0	0	0
1	0	1	0	0	0	0	0	in	0	0
1	1	0	0	0	0	0	0	0	in	0
1	1	1	0	0	0	0	0	0	0	in

DMux4Way

