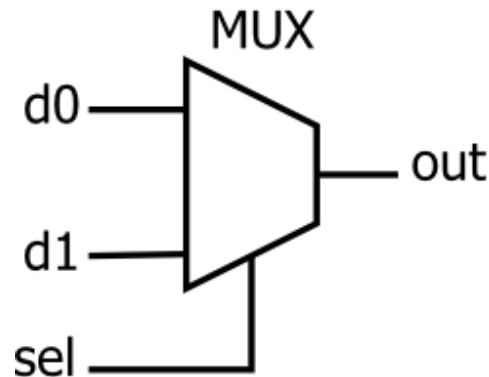
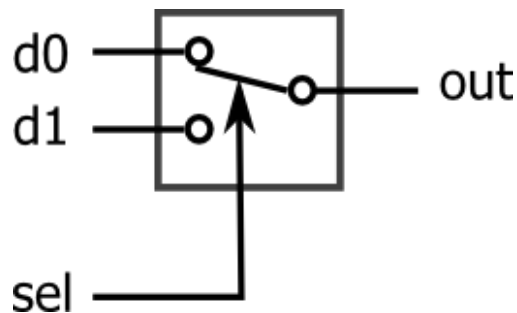


Združevanje signalov – izbiralnik

- ▶ izbiralnik ali multiplekser prenese na izhod enega izmed izbranih podatkovnih vhodov
- ▶ izbiralnik 2-1 ima 2 podatkovna vhoda (d0, d1) in en izbirni vhod (sel)

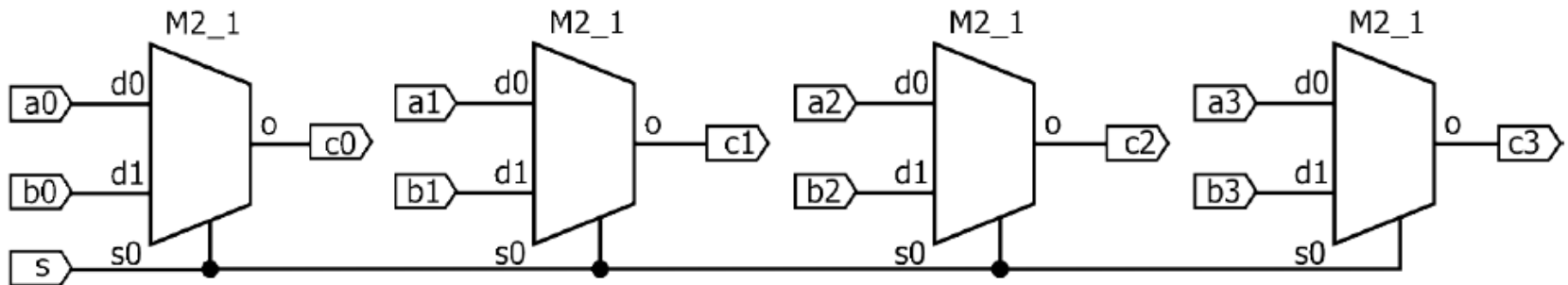
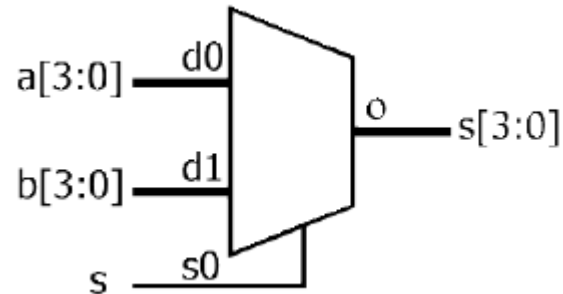


sel	d1	d0	out
0	0	0	0
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

The output column is grouped into two dashed ovals. The top oval, containing the values 0, 1, 0, 1, is labeled 'd0'. The bottom oval, containing the values 0, 0, 1, 1, is labeled 'd1'.

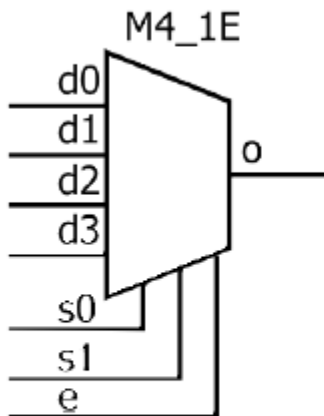
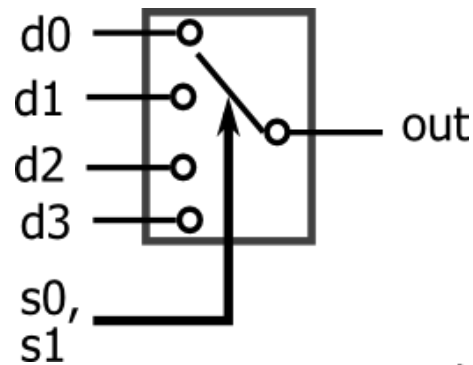
Izbiralnik z večbitnimi podatkovnimi vhodi

- ▶ večbitni izbiralnik je sestavljen s paralelno vezavo enobitnih
- ▶ primer: 4-bitni izbiralnik 2-1

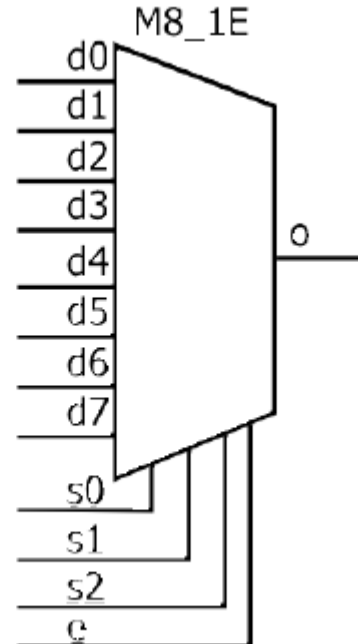


- ▶ izbirni vhodi (s) so vezani skupaj

Izbiralniki z 2^n podatkovnimi vhodi



e	s1	s0	o
0	x	x	0
1	0	0	d0
1	0	1	d1
1	1	0	d2
1	1	1	d3

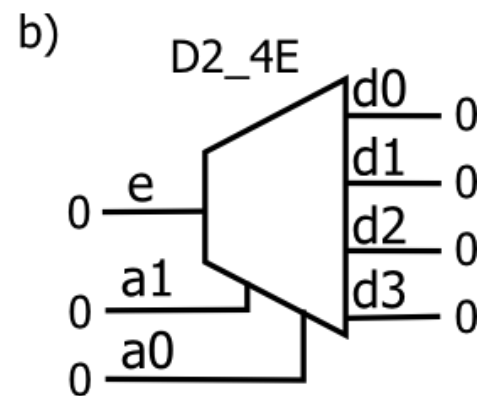
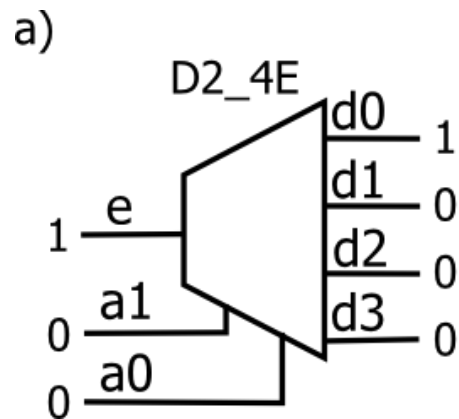
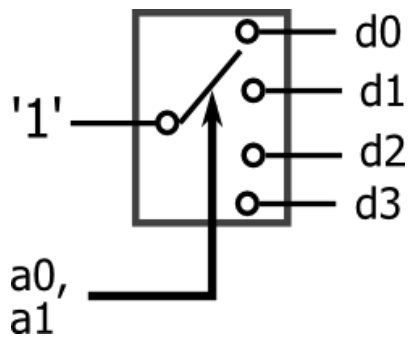


e	s2	s1	s0	o
0	x	x	x	0
1	0	0	0	d0
1	0	0	1	d1
1	0	1	0	d2
1	0	1	1	d3
1	1	0	0	d4
1	1	0	1	d5
1	1	1	0	d6
1	1	1	1	d7

- ▶ kadar je signal za omogočanje $e='0'$ je izhod '0', sicer pa je izhod enak izbranemu vhodu

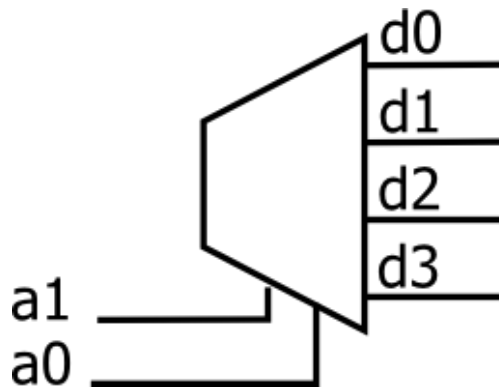
Razdeljevalnik - demultiplekser

- ▶ razdeljevalnik ima nasprotno funkcijo od izbiralnika
- ▶ Primer: razdeljevalnik 2-4



Binarni dekodirnik

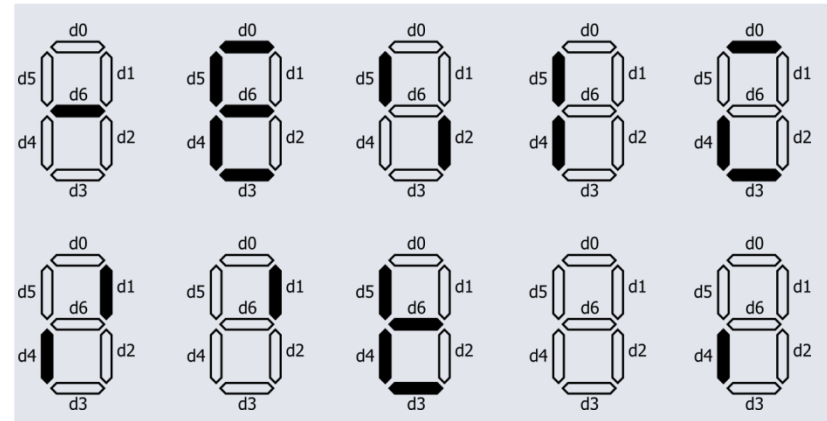
- ▶ binarni dekodirnik pretvori n vhodov v 2^n izhodov
- ▶ Primer: binarni dekodirnik 2-4



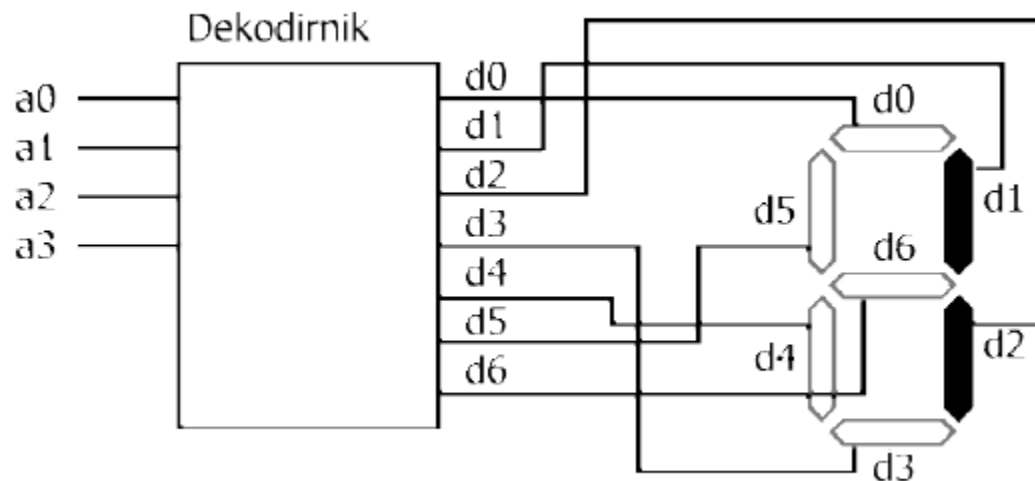
a_1	a_0	d_3	d_2	d_1	d_0
0	0	0	0	0	1
0	1	0	0	1	0
1	0	0	1	0	0
1	1	1	0	0	0

7-segmentni dekodirnik

▶ 7-segmentni prikazovalnik



▶ 7-segmentni dekodirnik pretvori 4-bitni vhod (a3..a0) v izhode za prikaz števil



a3..a0	d6..d0
0000	0111111
0001	0000110
0010	1011011
0011	1001111
0100	1100110
0101	1101101
0110	1111101
0111	0000111
1000	1111111
1001	1101111

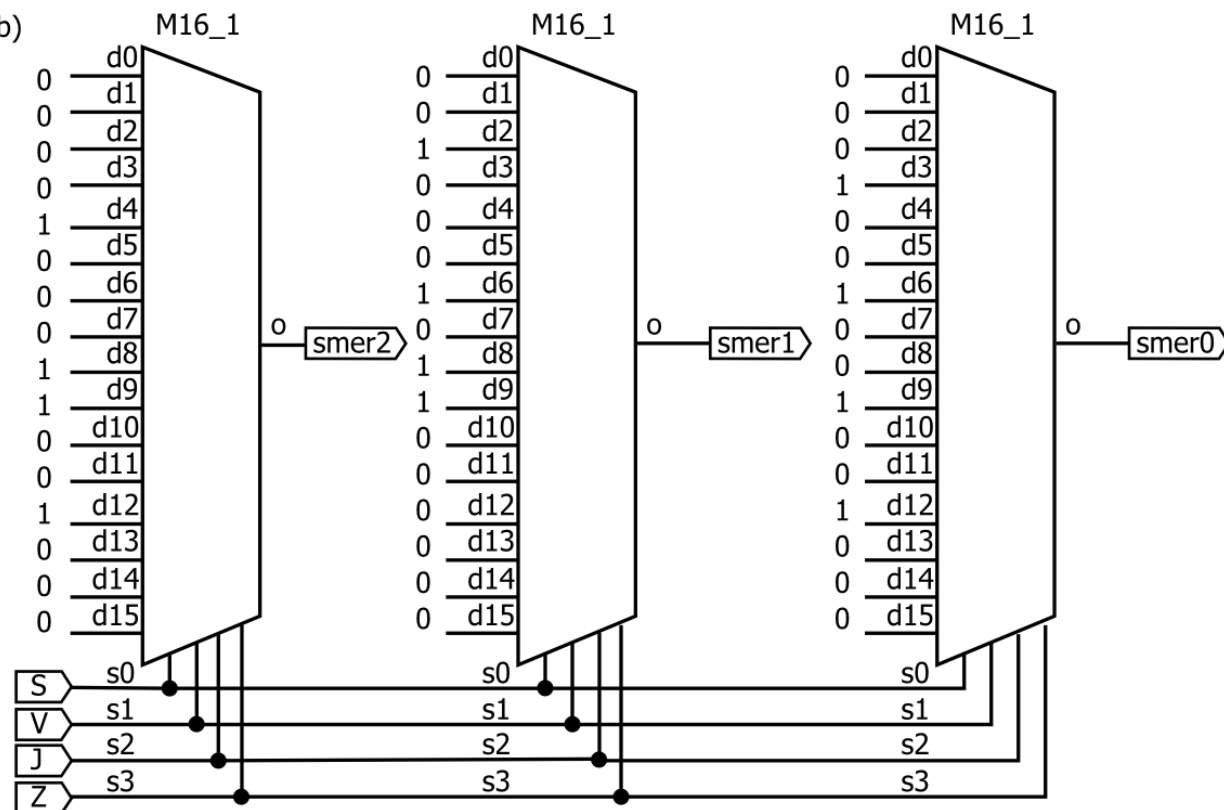
Dekodirnik smeri vetra

- ▶ Izhode senzorja smeri vetra (Z, J, V, S) kodiramo v binarni obliki
 - ▶ npr. smer=001 pri S=1 in V=1

a)

Z	J	V	S	smer[2:0]
0	0	0	0	000*
0	0	0	1	000 (S)
0	0	1	0	010 (V)
0	0	1	1	001 (SV)
0	1	0	0	100 (J)
0	1	0	1	000*
0	1	1	0	011 (JV)
0	1	1	1	000*
1	0	0	0	110 (Z)
1	0	0	1	111 (SZ)
1	0	1	0	000*
1	0	1	1	000*
1	1	0	0	101 (JZ)
1	1	0	1	000*
1	1	1	0	000*
1	1	1	1	000*

b)



Povzetek

- ▶ Opiši delovanje in izvedbe izbiralnika (multiplekserja).
- ▶ Kako deluleta razdeljevalnik in binarni dekodirnik?
- ▶ Opiši izdelavo kombinacijskega vezja (npr. 7-segmentnega dekodirnika) z uporabo izbiralnikov.