

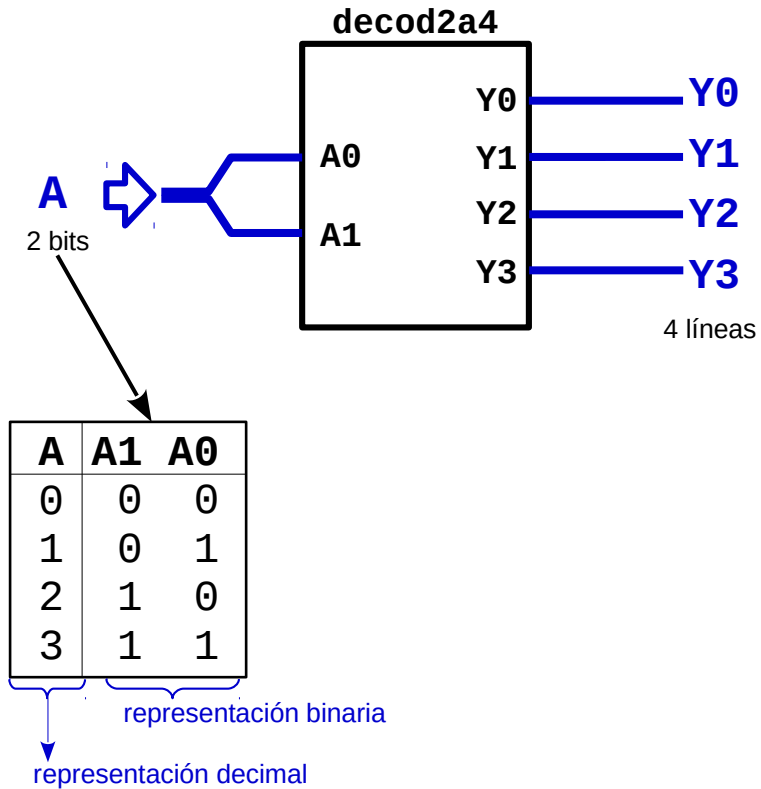
Decodificador de 2 a 4

Circuitos combinacionales

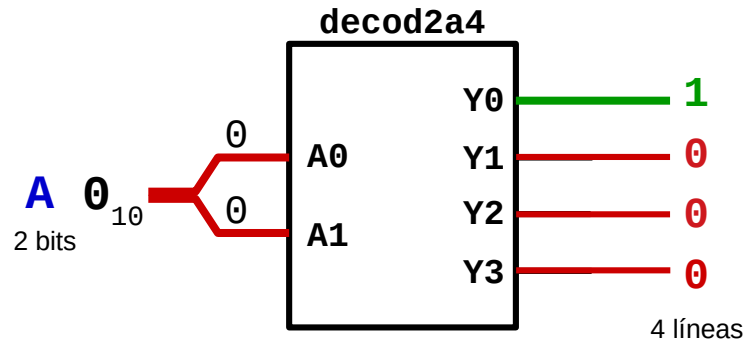
Electrónica digital

Felipe Machado

Decodificador de 2 a 4

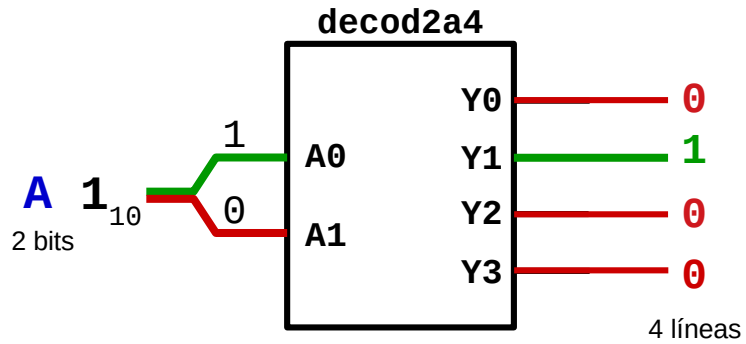


Decodificador de 2 a 4



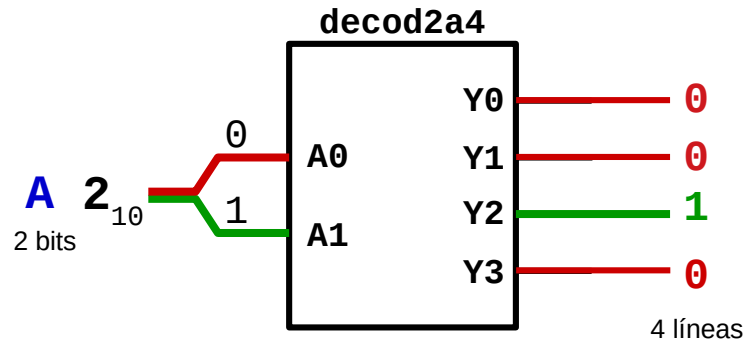
A	A1	A0
0	0	0
1	0	1
2	1	0
3	1	1

Decodificador de 2 a 4



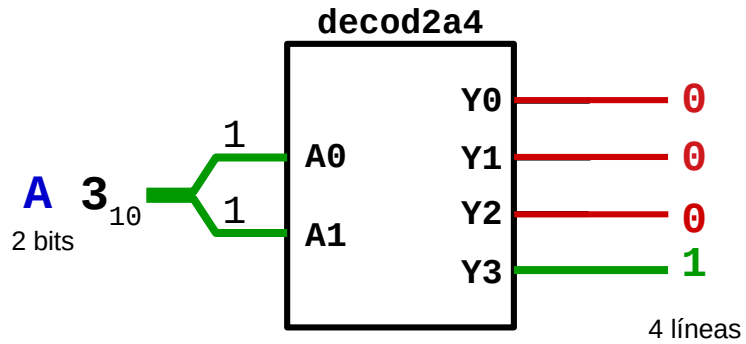
A	A1	A0
0	0	0
1	0	1
2	1	0
3	1	1

Decodificador de 2 a 4



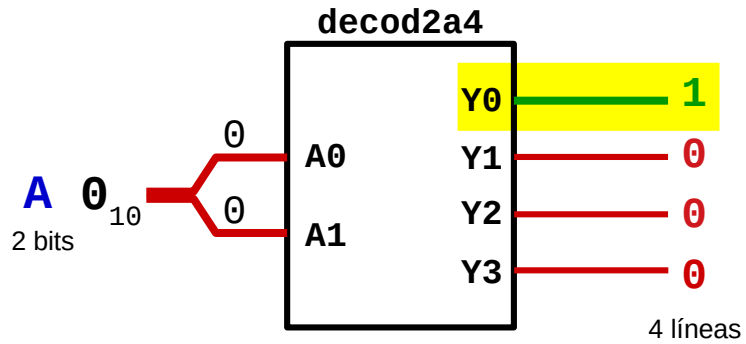
A	A1	A0
0	0	0
1	0	1
2	1	0
3	1	1

Decodificador de 2 a 4



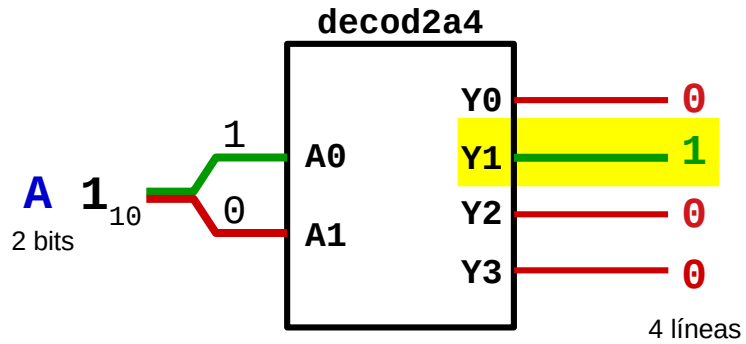
A	A1	A0
0	0	0
1	0	1
2	1	0
3	1	1

Decodificador de 2 a 4



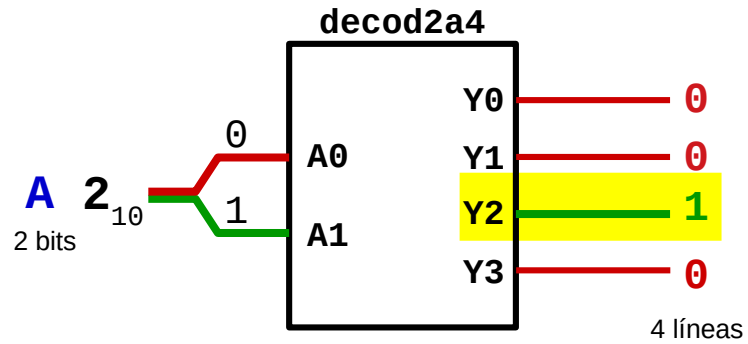
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1				
2	1	0				
3	1	1				

Decodificador de 2 a 4



A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0				
3	1	1				

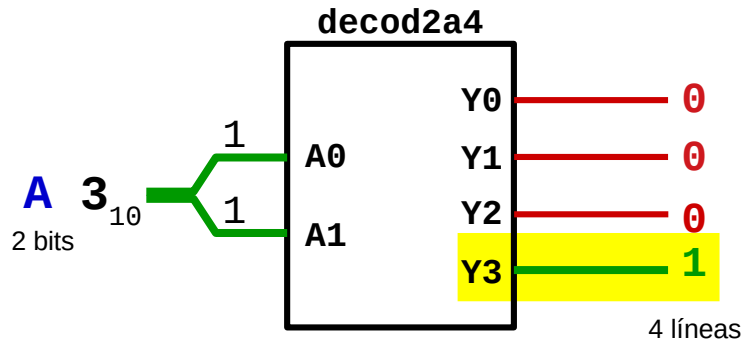
Decodificador de 2 a 4



A	A1	A0
0	0	0
1	0	1
2	1	0
3	1	1

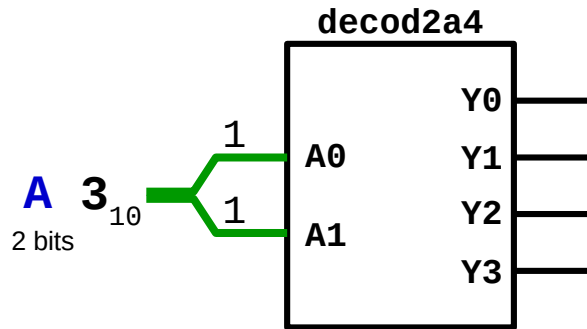
Y3	Y2	Y1	Y0
0	0	0	1
0	0	1	0
0	1	0	0

Decodificador de 2 a 4



A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0

Decodificador de 2 a 4



entradas

A	A1	A0
0	0	0
1	0	1
2	1	0
3	1	1

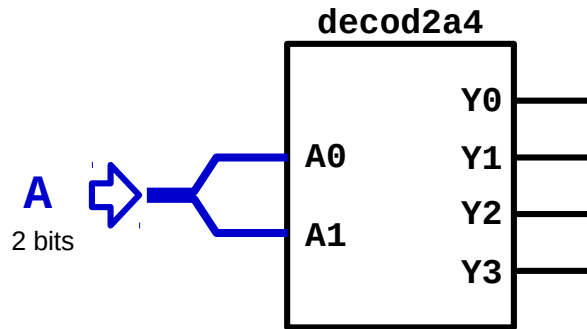
salidas

Y3	Y2	Y1	Y0
0	0	0	1
0	0	1	0
0	1	0	0
1	0	0	0

representación binaria
(codificación)

representación decimal

Decodificador de 2 a 4

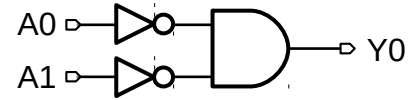
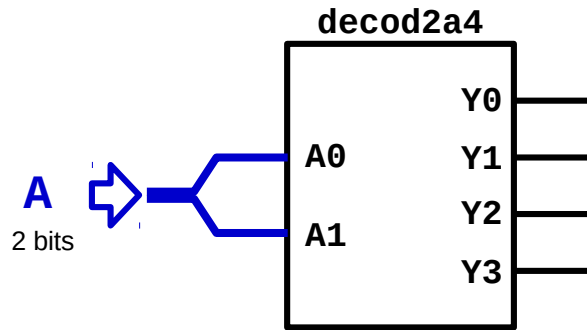


entradas			salidas			
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0

representación binaria
(codificación)

representación decimal

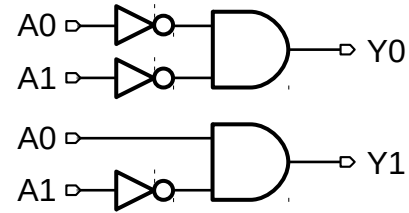
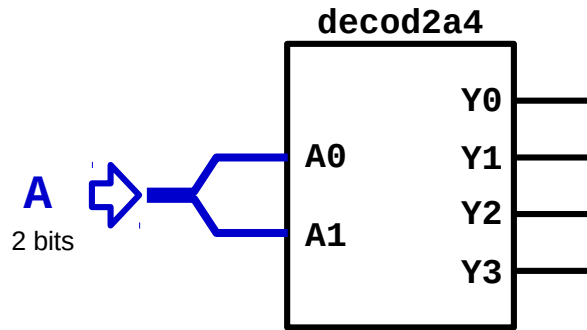
Decodificador de 2 a 4



entradas			salidas			
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0

$$m_0 = \overline{A1} \cdot \overline{A0} \rightarrow Y0 = \overline{A1} \cdot \overline{A0}$$

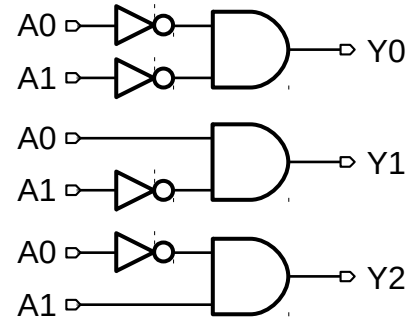
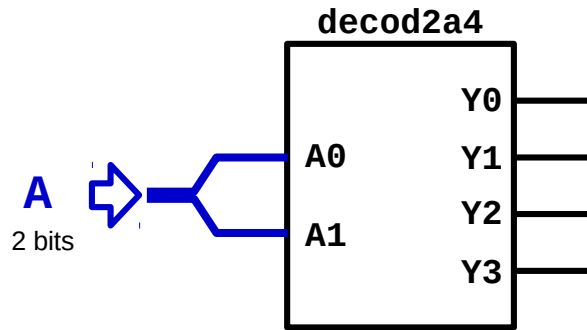
Decodificador de 2 a 4



entradas			salidas			
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0

$$m_1 = \overline{A1} \cdot A0 \longrightarrow Y1 = \overline{A1} \cdot A0$$

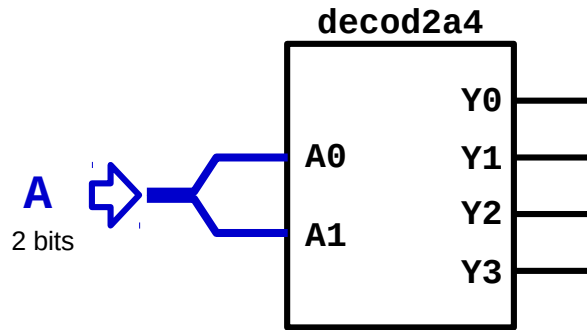
Decodificador de 2 a 4



entradas			salidas			
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0

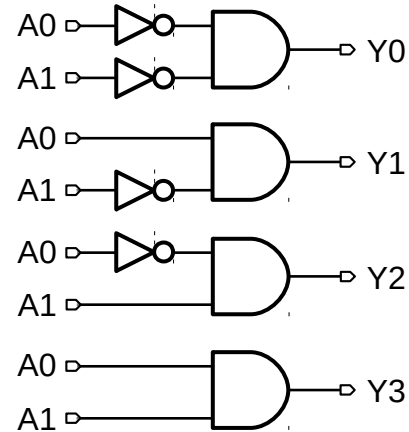
$$m_2 = A1 \cdot \overline{A0} \rightarrow Y2 = A1 \cdot \overline{A0}$$

Decodificador de 2 a 4

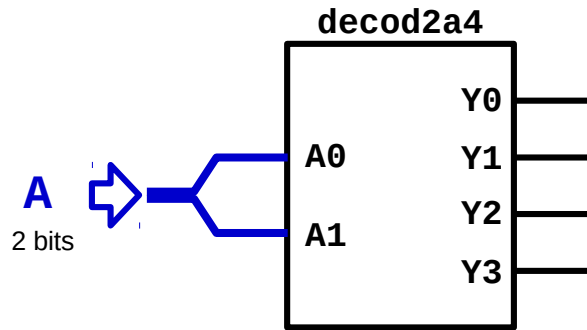


entradas			salidas			
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0

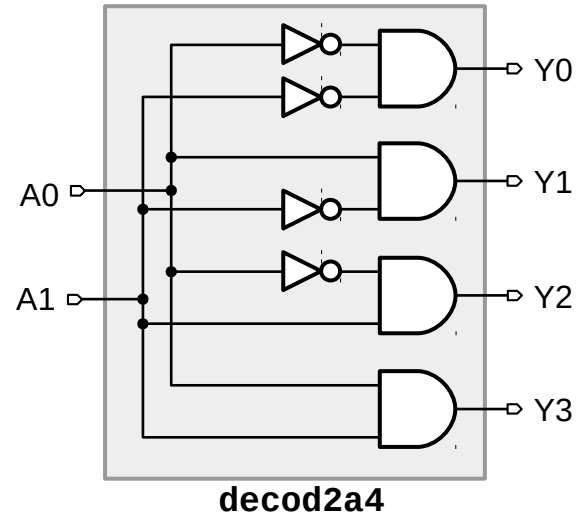
$m_3 = A1 \cdot A0 \rightarrow Y3 = A1 \cdot A0$



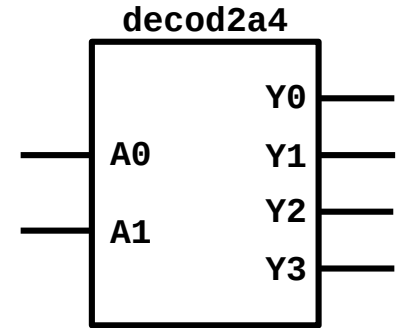
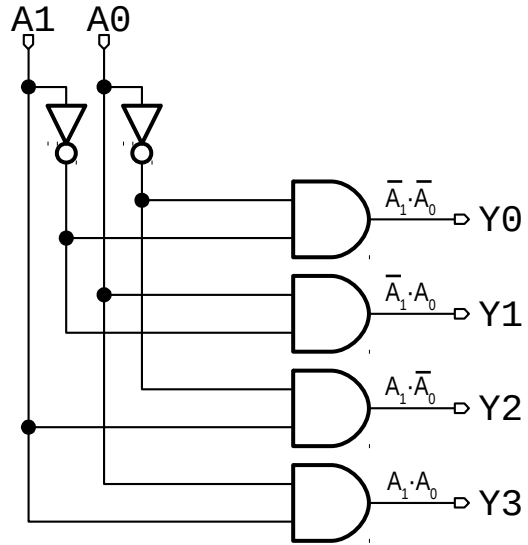
Decodificador de 2 a 4



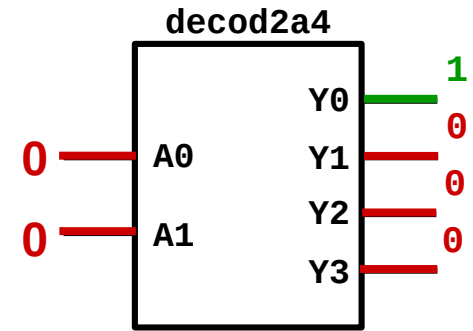
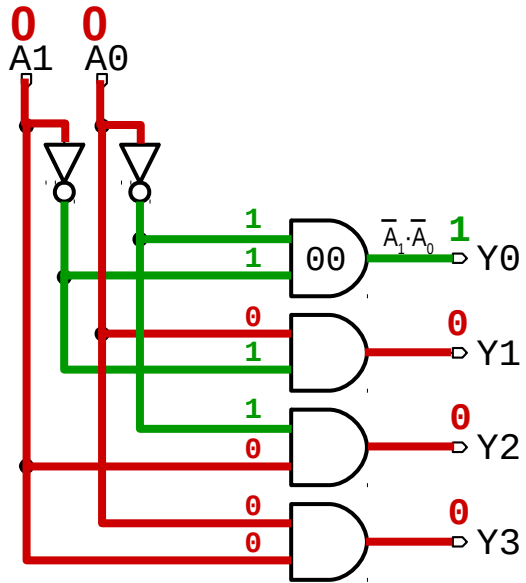
entradas			salidas			
A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0



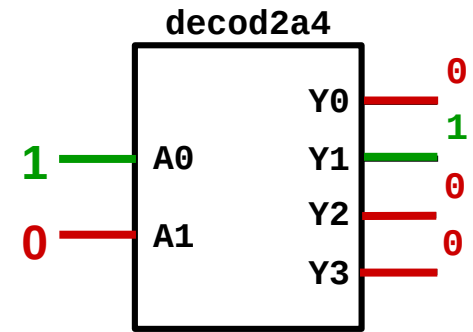
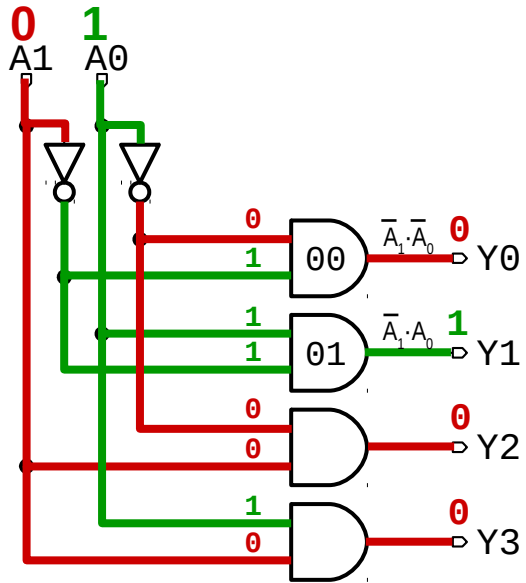
Decodificador de 2 a 4



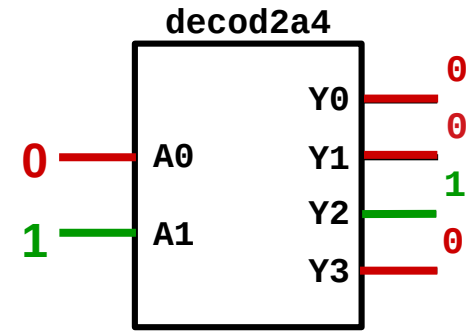
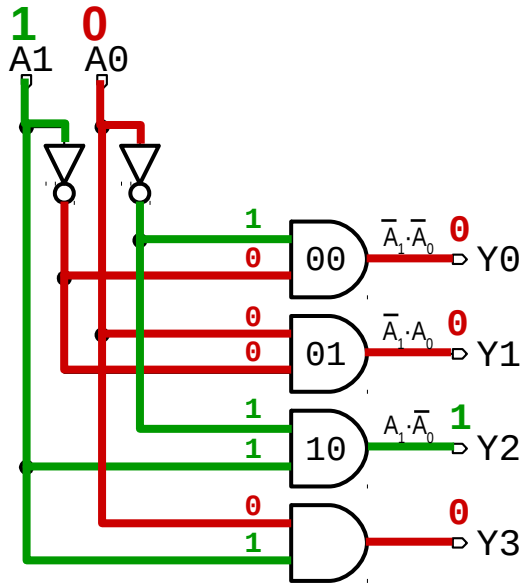
Decodificador de 2 a 4



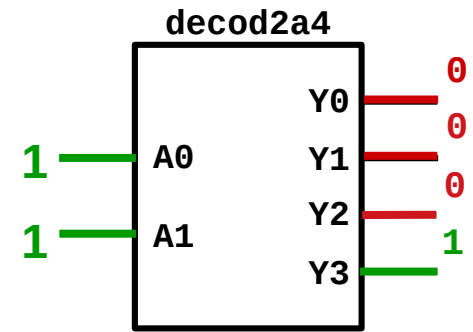
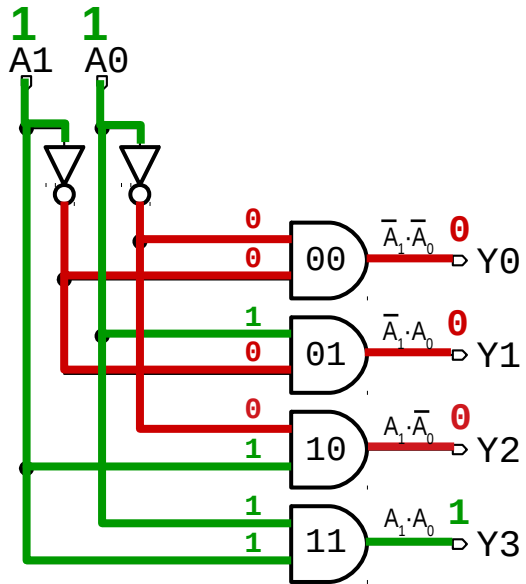
Decodificador de 2 a 4



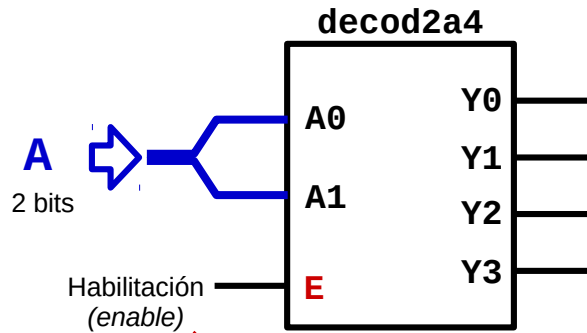
Decodificador de 2 a 4



Decodificador de 2 a 4

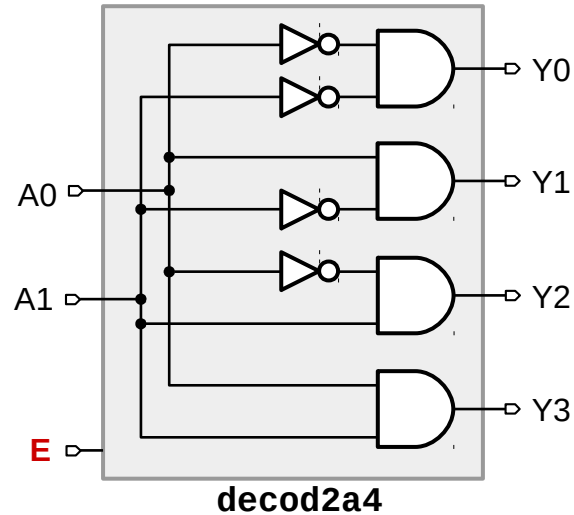


Decodificador de 2 a 4 con habilitación (*enable*)

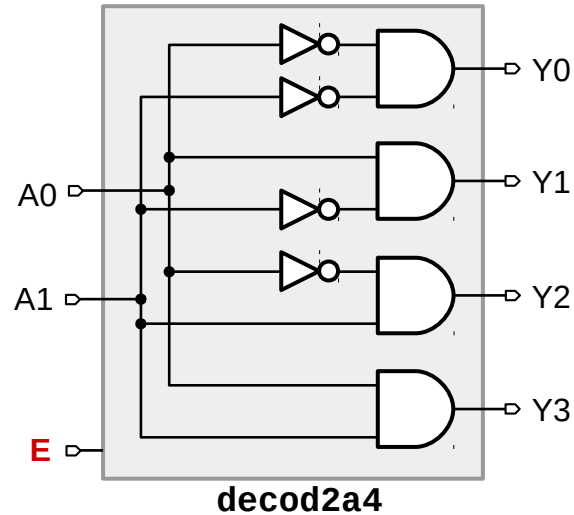
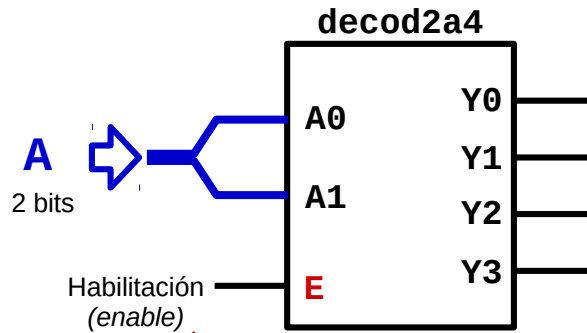


entradas salidas

A	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	1
1	0	1	0	0	1	0
2	1	0	0	1	0	0
3	1	1	1	0	0	0



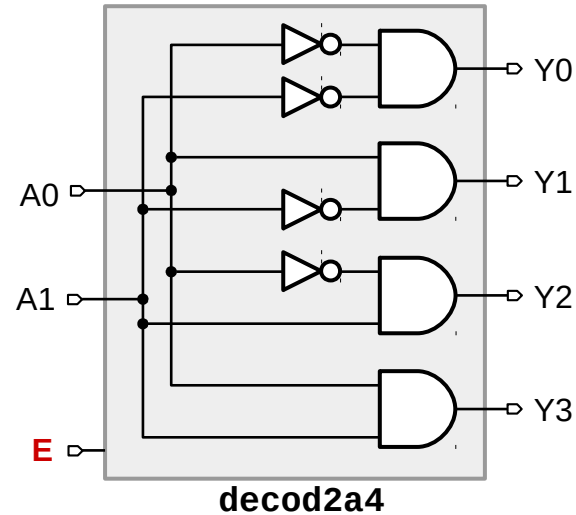
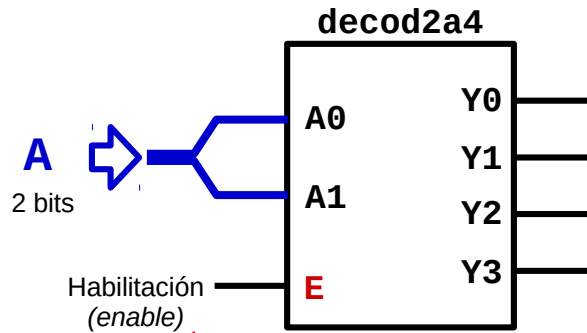
Decodificador de 2 a 4 con habilitación (*enable*)



		entradas		salidas			
A	E	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0
2	0	1	0	0	0	0	0
3	0	1	1	0	0	0	0
0	1	0	0				
1	1	0	1				
2	1	1	0				
3	1	1	1				

E = '0'
deshabilitado

Decodificador de 2 a 4 con habilitación (*enable*)

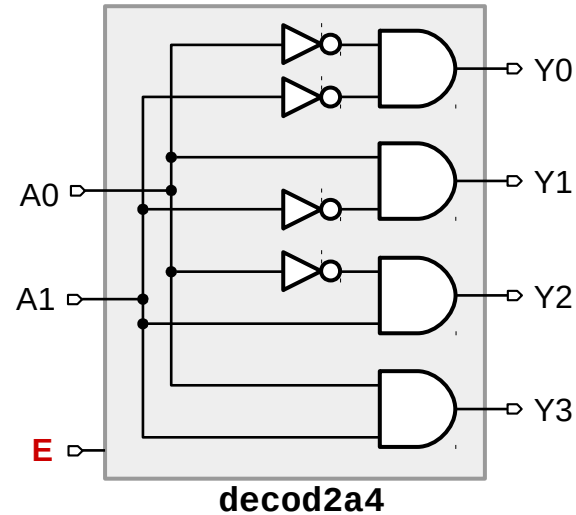
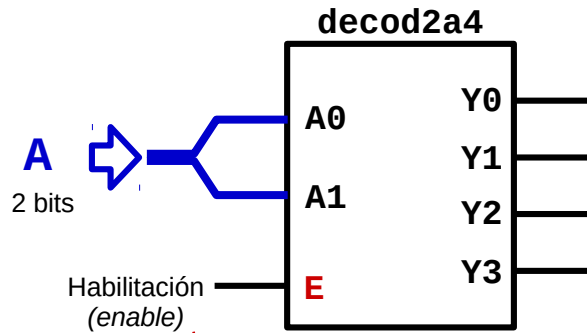


entradas				salidas			
A	E	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0
2	0	1	0	0	0	0	0
3	0	1	1	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

E = '0'
deshabilitado

E = '1'
habilitado

Decodificador de 2 a 4 con habilitación (*enable*)



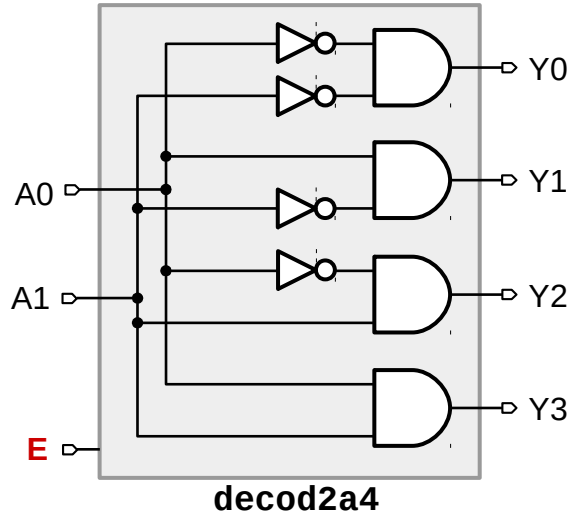
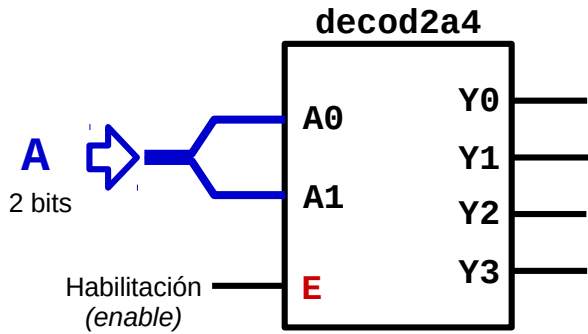
entradas				salidas			
A	E	A1	A0	Y3	Y2	Y1	Y0
0	0	0	0	0	0	0	0
1	0	0	1	0	0	0	0
2	0	1	0	0	0	0	0
3	0	1	1	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

E = '0'
deshabilitado

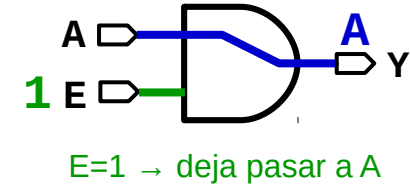
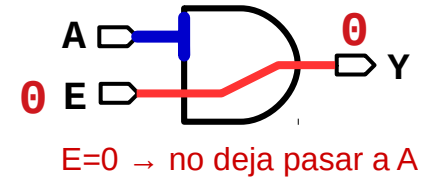
E = '1'
habilitado

A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



Puerta AND

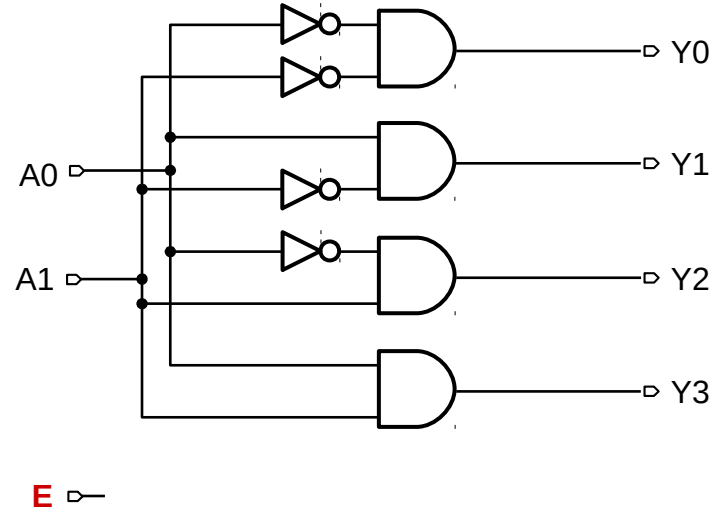
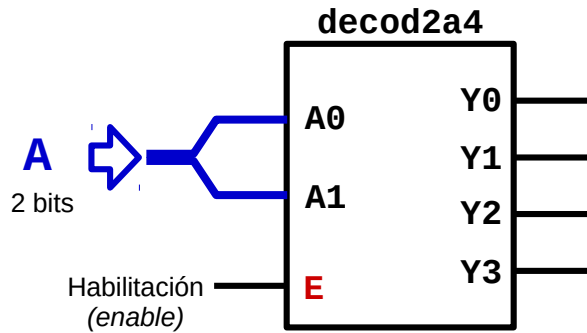


E	A	Y
0	0	0
0	1	0
1	0	0
1	1	1

E	A	Y
0	0	0
0	1	0
1	0	0
1	1	1

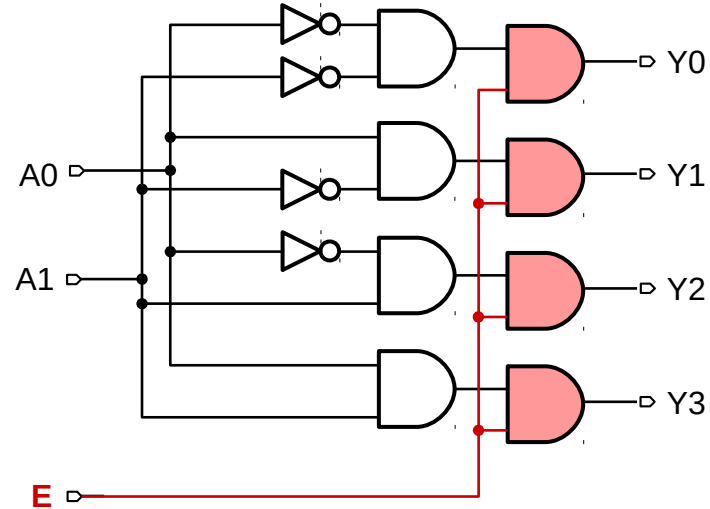
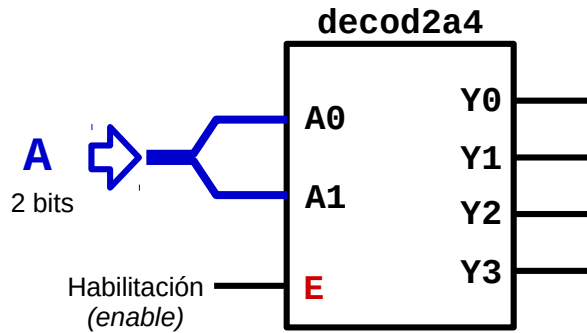
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



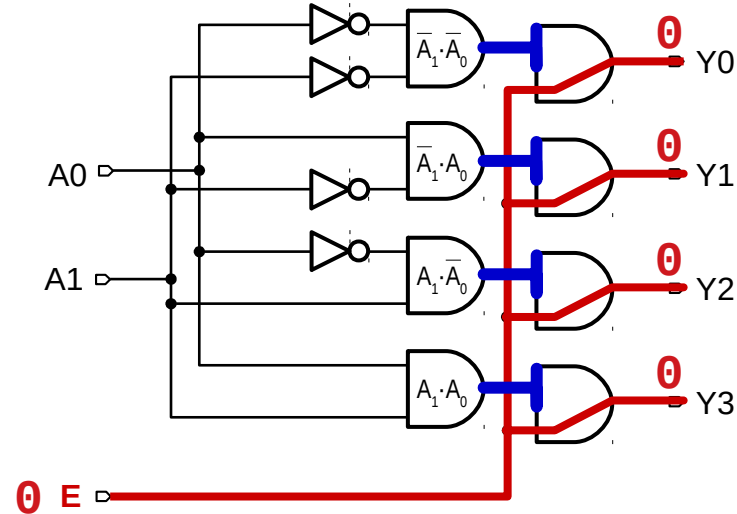
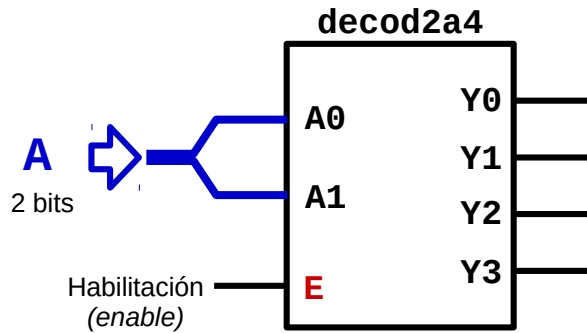
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



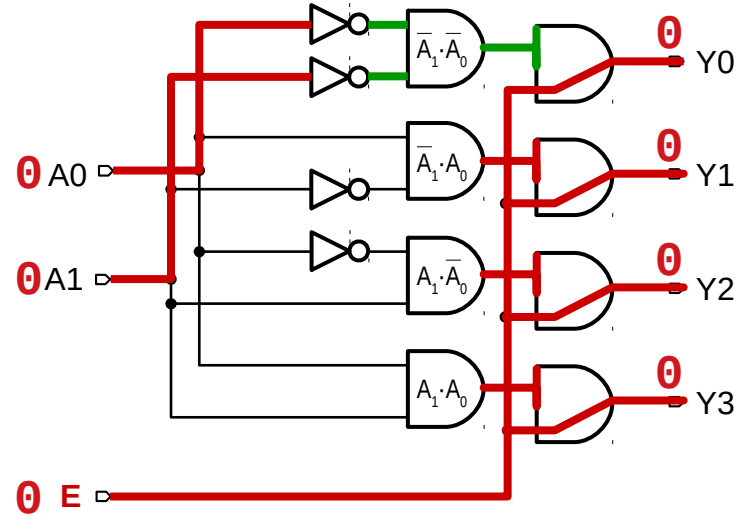
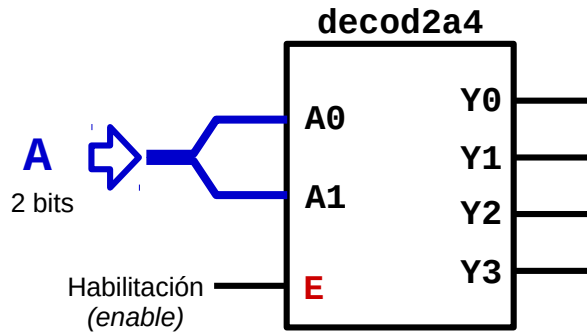
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



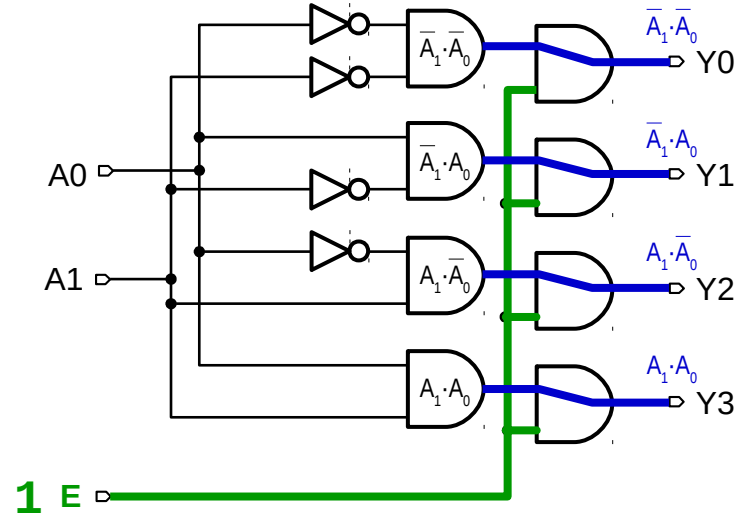
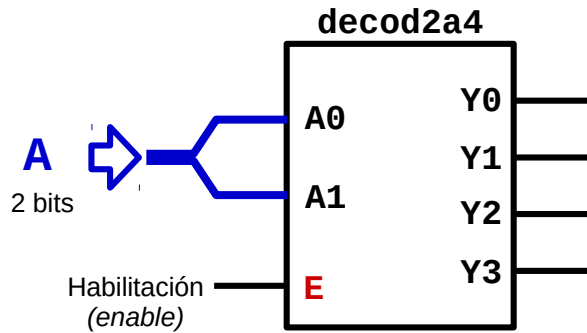
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



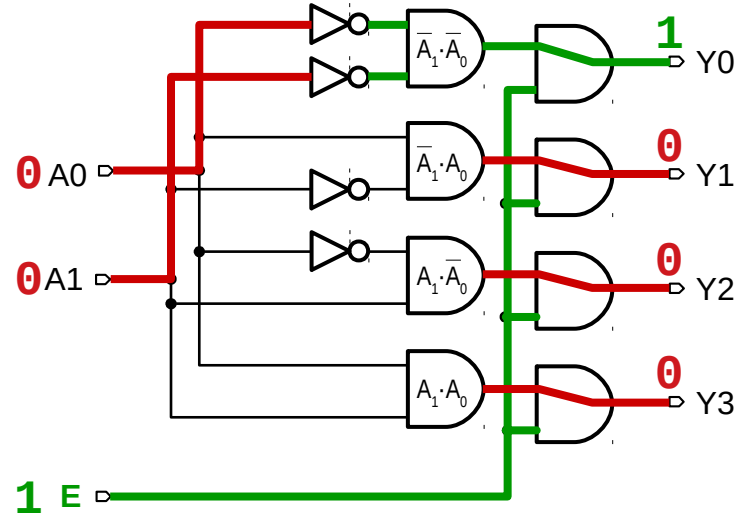
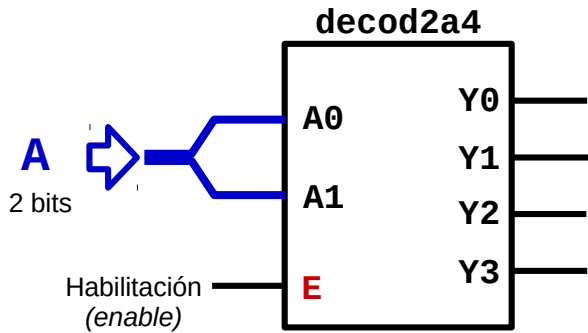
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



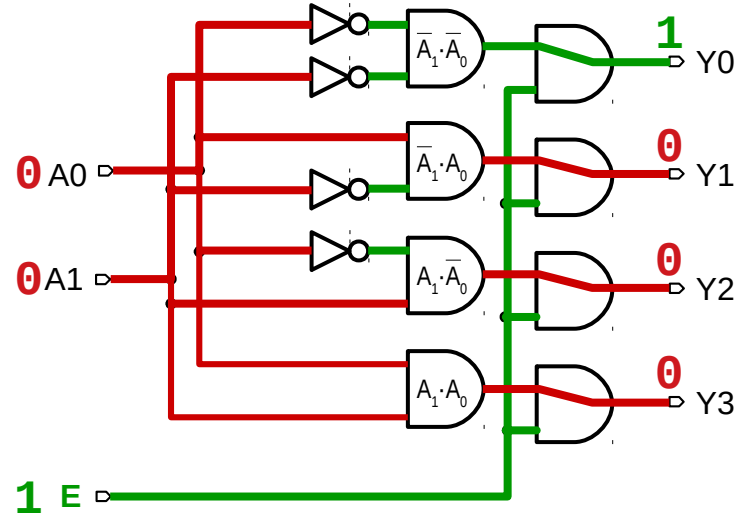
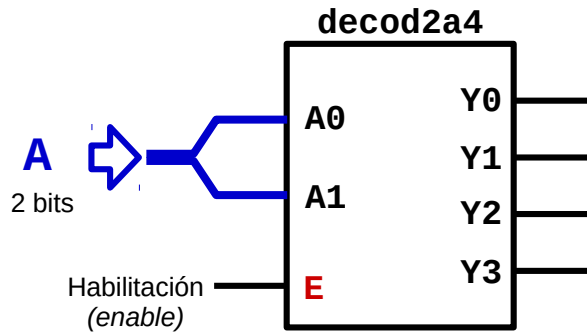
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



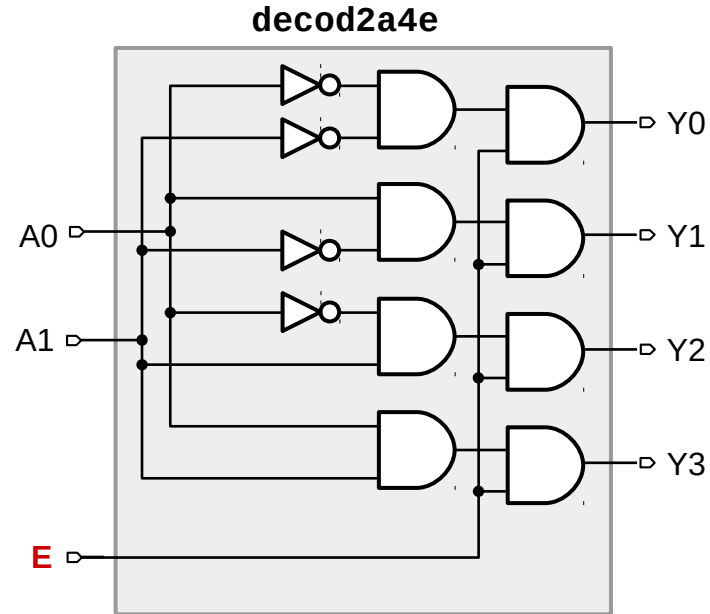
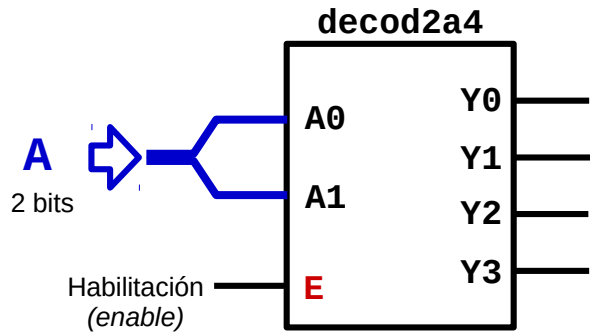
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)



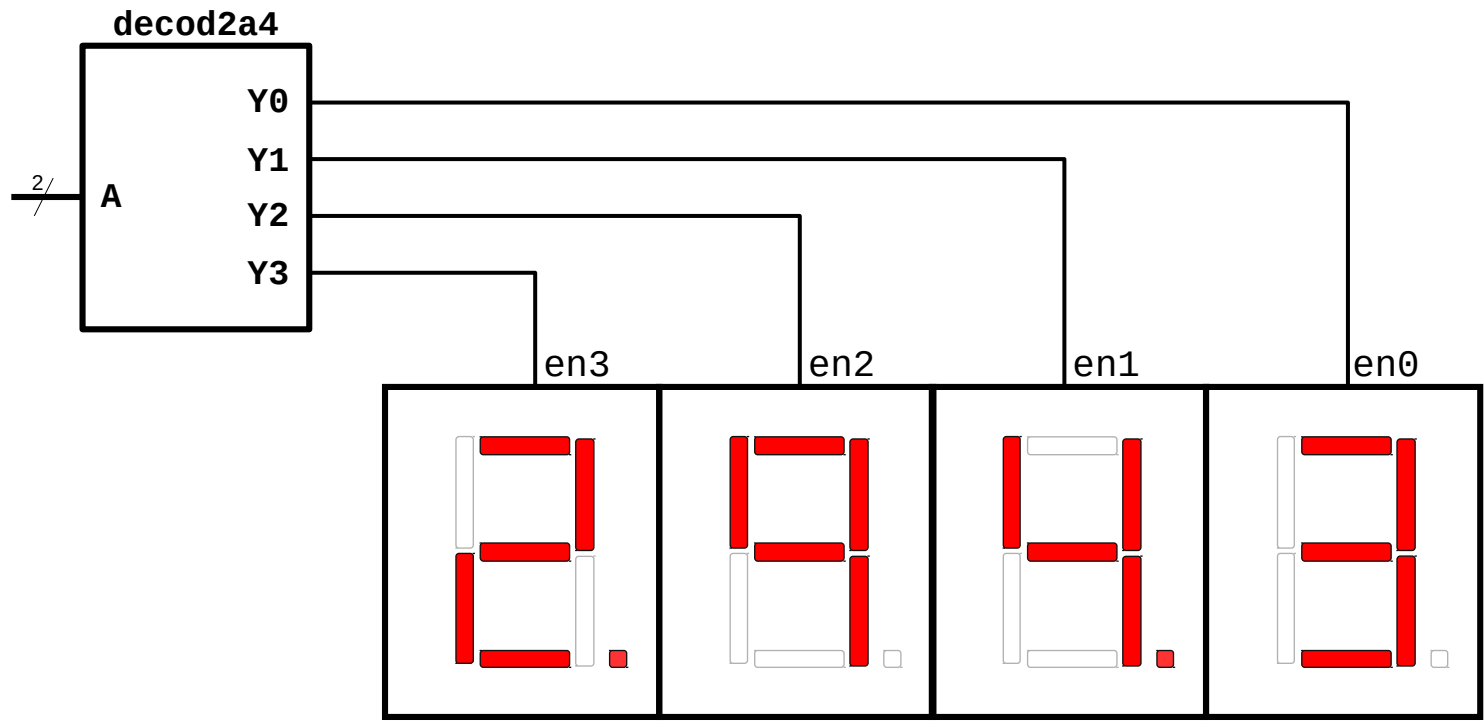
A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

Decodificador de 2 a 4 con habilitación (*enable*)

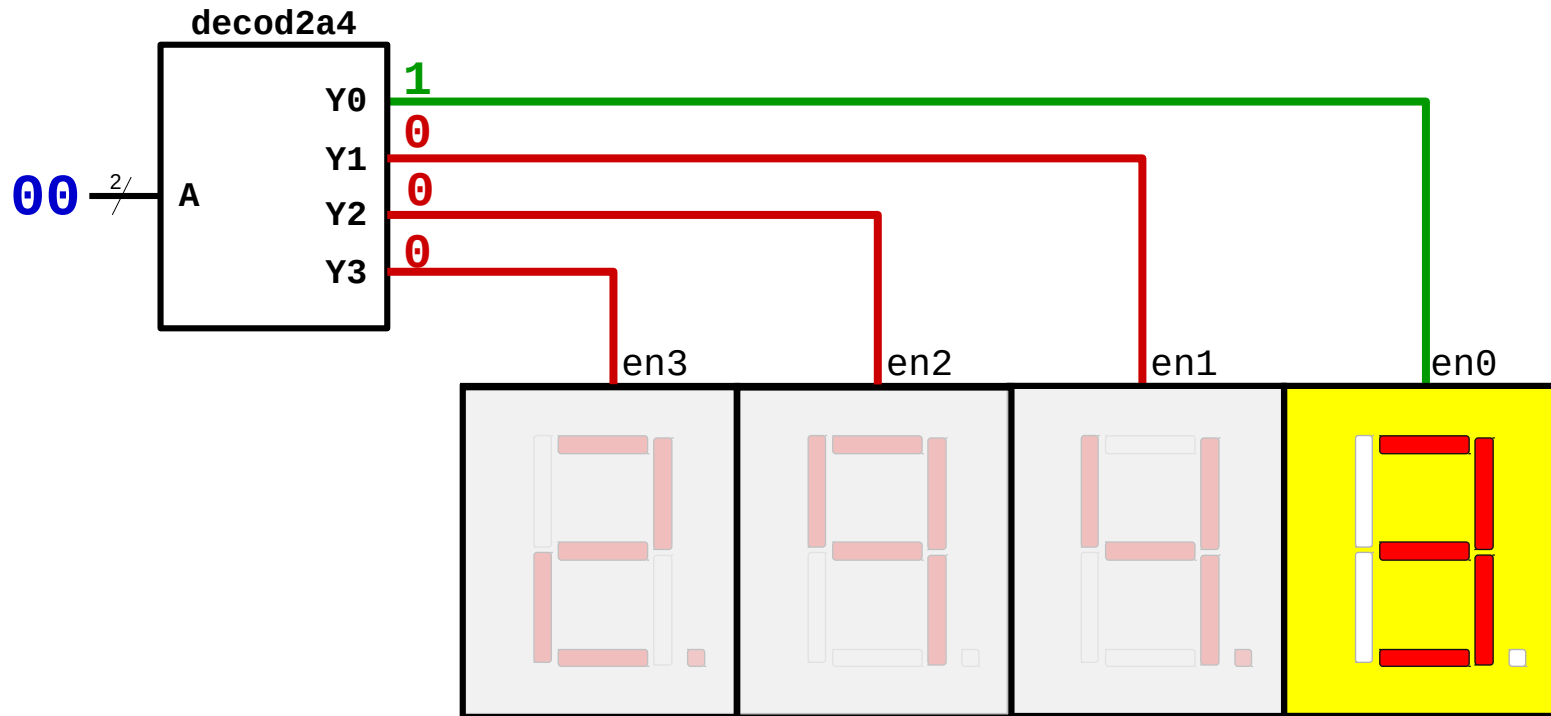


A	E	A1	A0	Y3	Y2	Y1	Y0
X	0	X	X	0	0	0	0
0	1	0	0	0	0	0	1
1	1	0	1	0	0	1	0
2	1	1	0	0	1	0	0
3	1	1	1	1	0	0	0

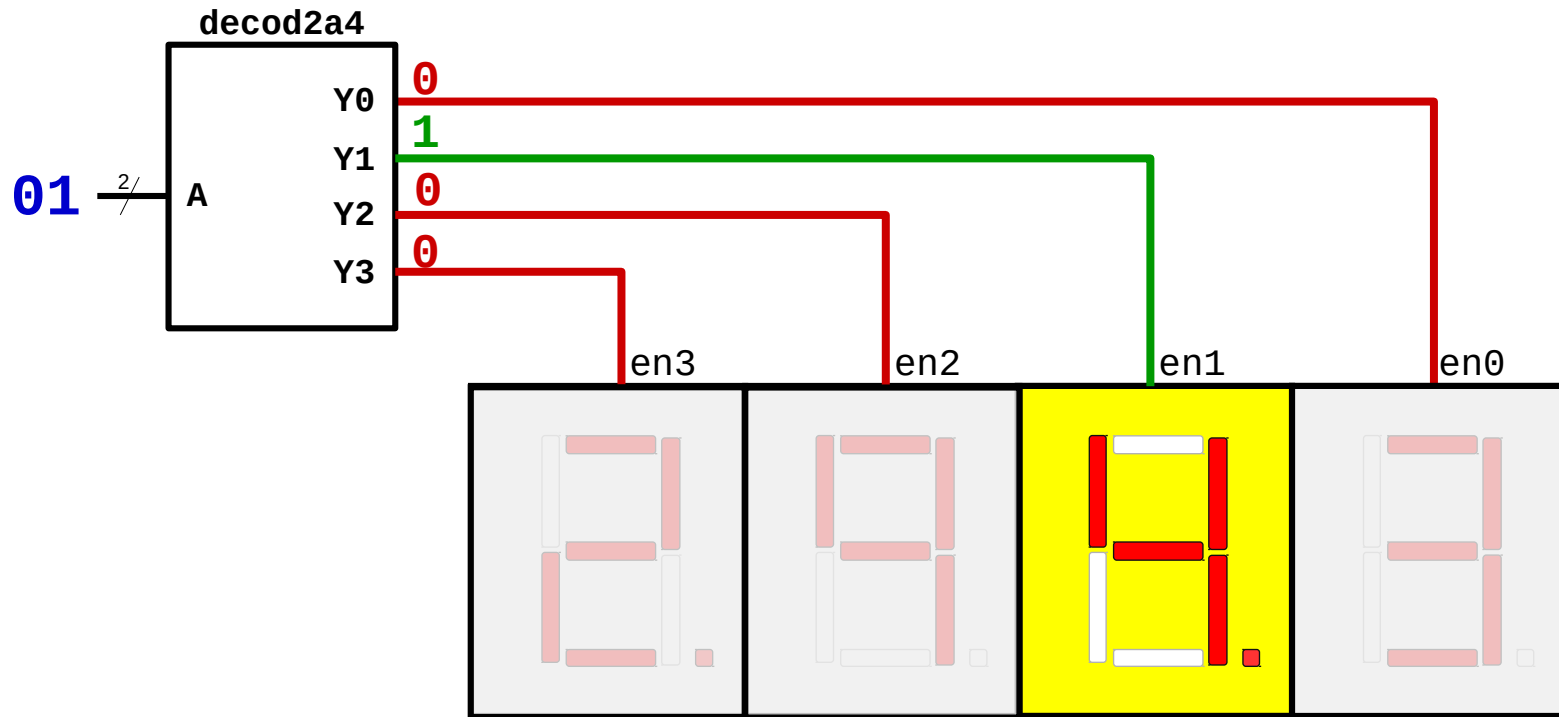
Decodificador



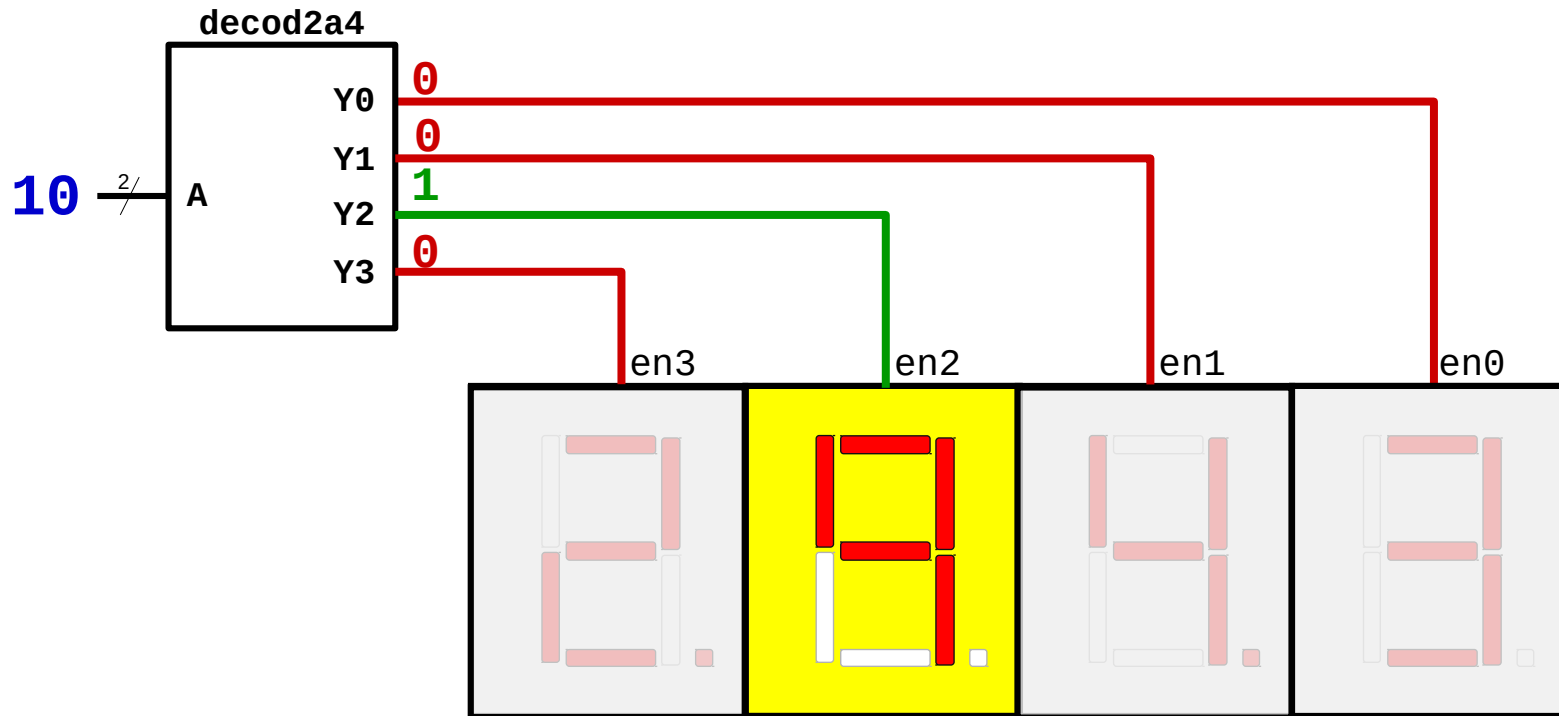
Decodificador



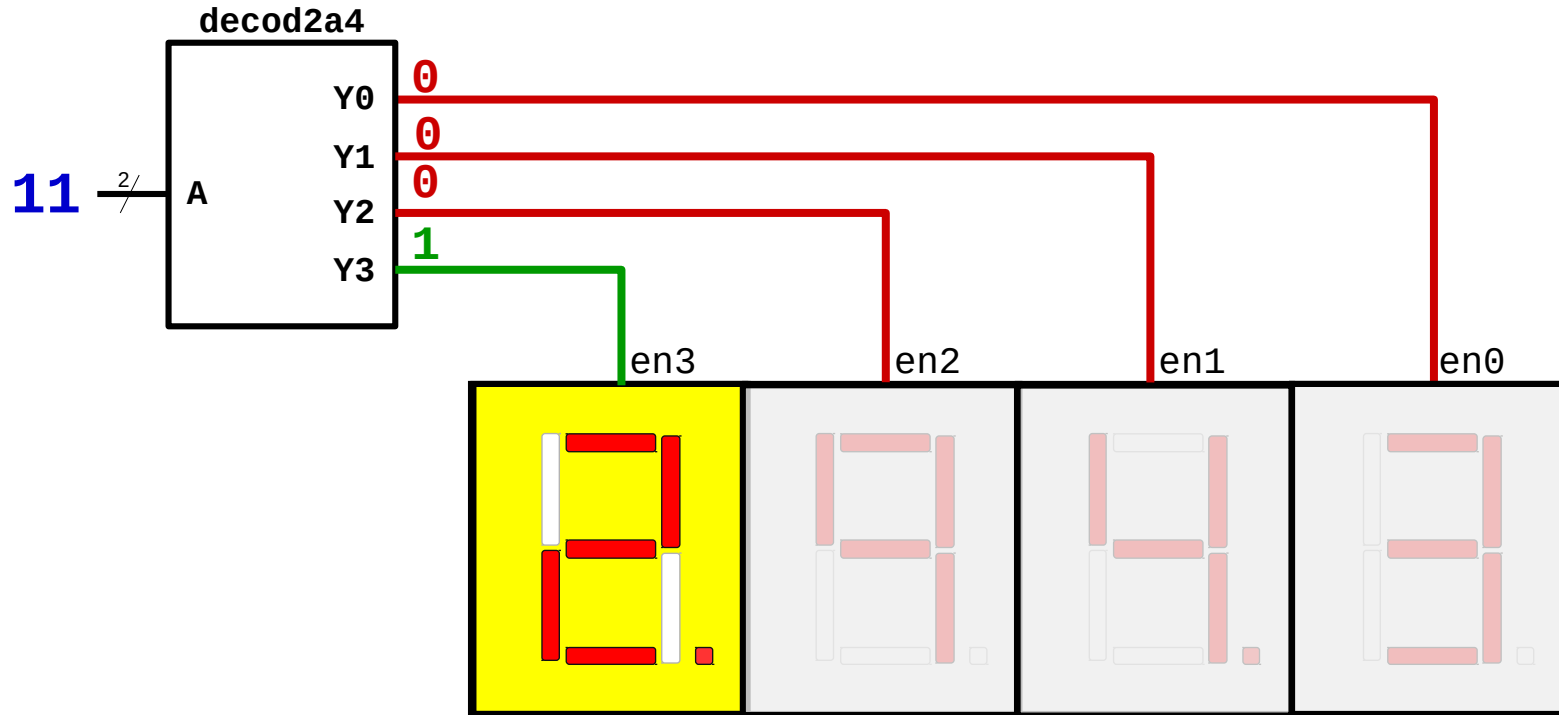
Decodificador



Decodificador



Decodificador

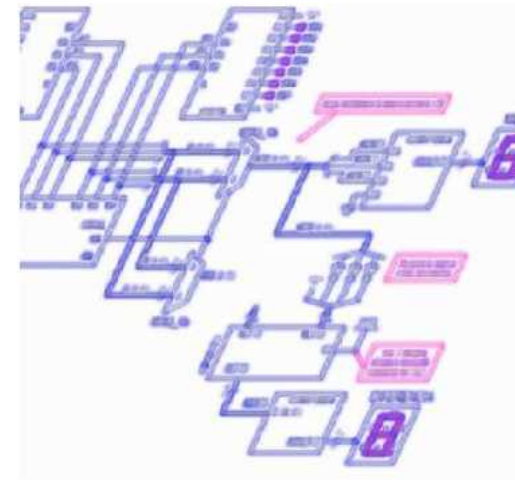


Problemas resueltos de electrónica digital

F. Machado

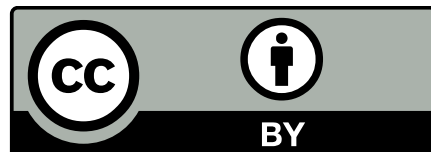
<http://hdl.handle.net/10115/5727>

Problemas resueltos
de Electrónica Digital



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Esta presentación:

Decodificador de 2 a 4 - Circuitos combinacionales

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Video disponible: https://youtu.be/OI_f3MdsHjM

