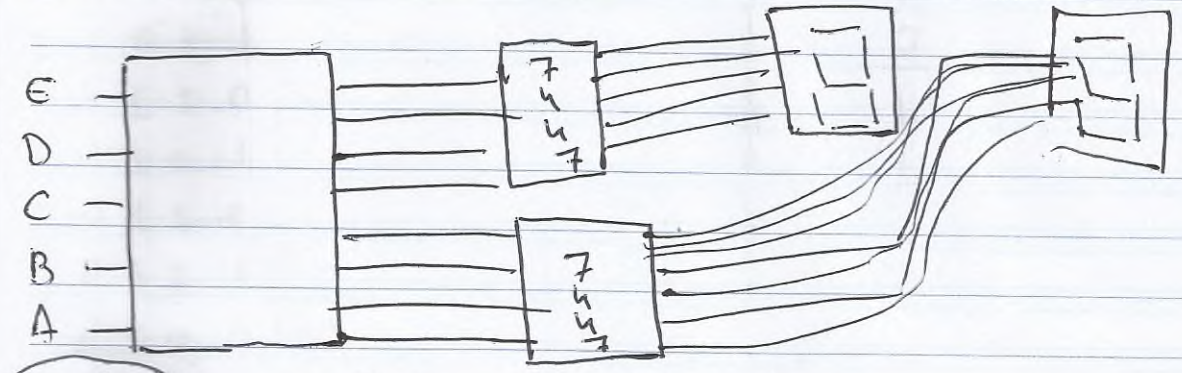
Eletrônica Digital -

Projeto - Binário 5bits → 7 segmentos



Binário 5bits → BCD dezena
→ BCD unidade

Decodificador BCD - 7seg

EDCBA

		Display da Dezena				Display da Unidade			
E D C B A	Nº	dd	cd	bd	ad	du	cu	bu	au
0 0 0 0 0	00	0	0	0	0	0	0	0	0
0 0 0 0 1	01	0	0	0	0	0	0	0	1
0 0 0 1 0	02	0	0	0	0	0	0	1	0
0 0 0 1 1	03	0	0	0	0	0	0	1	1
0 0 1 0 0	04	0	0	0	0	0	1	0	0
0 0 1 0 1	05	0	0	0	0	0	1	0	1
0 0 1 1 0	06	0	0	0	0	0	1	1	0
0 0 1 1 1	07	0	0	0	0	0	1	1	1
0 1 0 0 0	08	0	0	0	0	1	0	0	0
0 1 0 0 1	09	0	0	0	0	1	0	0	1
0 1 0 1 0	10	0	0	0	1	0	0	0	0
0 1 0 1 1	11	0	0	0	1	0	0	0	1
0 1 1 0 0	12	0	0	0	1	0	0	1	0
0 1 1 0 1	13	0	0	0	1	0	0	1	1
0 1 1 1 0	14	0	0	0	1	0	1	0	0
0 1 1 1 1	15	0	0	0	1	0	1	0	1
1 0 0 0 0	16	0	0	0	1	0	1	1	0
1 0 0 0 1	17	0	0	0	1	0	1	1	1
1 0 0 1 0	18	0	0	0	1	1	0	0	0
1 0 0 1 1	19	0	0	0	1	1	0	0	1
1 0 1 0 0	20	0	0	1	0	0	0	0	0
1 0 1 0 1	21	0	0	1	0	0	0	0	1
1 0 1 1 0	22	0	0	1	0	0	0	1	0
1 0 1 1 1	23	0	0	1	0	0	0	1	1
1 1 0 0 0	24	0	0	1	0	0	1	0	0
1 1 0 0 1	25	0	0	1	0	0	1	0	1
1 1 0 1 0	26	0	0	1	0	0	1	1	0
1 1 0 1 1	27	0	0	1	0	0	1	1	1
1 1 1 0 0	28	0	0	1	0	1	0	0	0
1 1 1 0 1	29	0	0	1	0	1	0	0	1
1 1 1 1 0	30	0	0	1	1	0	0	0	0
1 1 1 1 1	31	0	0	1	1	0	0	0	1

bd = 0	cd = 0	au = A

bd

B \	A	A	Ā	Ā	
B	0	1	1	0	D̄
	1	1	1	1	D
B̄	1	1	1	1	D
	0	1	1	0	D̄
	C̄	C		C̄	

Ē

B \	A	A	Ā	Ā	
B	0	0	0	0	D̄
	0	0	0	0	D
B̄	0	0	0	0	D
	0	0	0	0	D̄
	C̄	C		C̄	

ad

B \	A	A	Ā	Ā	
B	1	0	0	1	D̄
	0	1	1	0	D
B̄	0	0	0	0	D
	1	0	0	1	D̄
	C̄	C		C̄	

Ē

B \	A	A	Ā	Ā	
B	0	0	0	0	D̄
	1	1	1	1	D
B̄	0	1	1	0	D
	0	0	0	0	D̄
	C̄	C		C̄	

du

B \	A	A	Ā	Ā	
B	1	0	0	1	D̄
	0	0	0	0	D
B̄	0	1	1	0	D
	0	0	0	0	D̄
	C̄	C		C̄	

Ē

B \	A	A	Ā	Ā	
B	0	0	0	0	D̄
	0	0	0	0	D
B̄	1	0	0	1	D
	0	0	0	0	D̄
	C̄	C		C̄	

cu

B \	A	A	Ā	Ā	
B	0	0	0	0	D̄
	1	0	0	1	D
B̄	1	0	0	1	D
	1	0	0	1	D̄
	C̄	C		C̄	

Ē

B \	A	A	Ā	Ā	
B	0	1	1	0	D̄
	0	1	1	0	D
B̄	0	0	0	0	D
	0	1	1	0	D̄
	C̄	C		C̄	

bu

B \	A	A	Ā	Ā	
B	0	1	1	0	D̄
	1	0	0	1	D
B̄	0	0	0	0	D
	1	0	0	1	D̄
	C̄	C		C̄	

Ē

B \	A	A	Ā	Ā	
B	1	1	1	1	D̄
	0	0	0	0	D
B̄	0	1	1	0	D
	0	0	0	0	D̄
	C̄	C		C̄	

$$dd = 0$$

$$Cd = 0$$

$$bd = C\bar{E} + D\bar{E}$$

$$ad = BCD + \bar{C}\bar{D}\bar{E} + C\bar{D}\bar{E} + B\bar{D}\bar{E}$$

$$du = B\bar{C}\bar{D}\bar{E} + \bar{B}C\bar{D}\bar{E} + \bar{B}\bar{C}D\bar{E}$$

$$Cu = \bar{C}D\bar{E} + \bar{B}\bar{C}\bar{E} + BC\bar{E} + C\bar{D}\bar{E}$$

$$bu = BC\bar{D} + B\bar{C}D\bar{E} + \bar{B}\bar{C}\bar{D}\bar{E} + B\bar{D}\bar{E} + \bar{B}CD\bar{E}$$

$$au = A$$