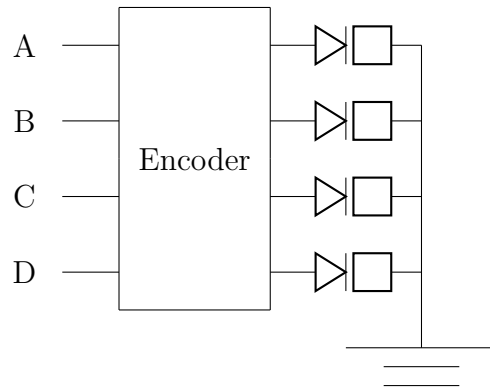
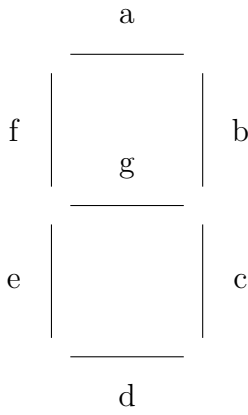


Laborator Proiectare Logică 7

Sîrghe Matei

November 27, 2024

Encoder



$$\begin{aligned}
 FCD &= \sum(0, 2, 3, 5, \dots, 10, 12, 14, 15) \\
 &= \bar{A}\bar{B}\bar{C}\bar{D} + \bar{A}\bar{B}C\bar{D} + \bar{A}\bar{B}CD + \\
 &+ \bar{A}B\bar{C}\bar{D} + \bar{A}B\bar{C}D + \bar{A}BC\bar{D} + \\
 &+ \bar{A}BCD + A\bar{B}\bar{C}\bar{D} + A\bar{B}\bar{C}D + A\bar{B}C\bar{D} + A\bar{B}CD + \\
 &+ AB\bar{C}\bar{D} + AB\bar{C}D + ABC\bar{D} + ABCD \\
 FCC &= \prod(1, 4, 11, 13) \\
 &= (A + B + C + \bar{D})(A + \bar{B} + C + D)(\bar{A} + \\
 &B + \bar{C} + \bar{D})(\bar{A} + \bar{B} + C + \bar{D})
 \end{aligned}$$

A	B	C	D	a	b	c	d	e	f	g
0	0	0	0	1	1	1	1	1	1	0
0	0	0	1	0	1	1	0	0	0	0
0	0	1	0	1	1	0	1	1	0	1
0	0	1	1	1	1	1	1	0	0	1
0	1	0	0	0	1	1	0	0	1	1
0	1	0	1	1	0	1	1	0	1	1
0	1	1	0	1	0	1	1	1	1	1
0	1	1	1	1	1	1	0	0	0	0
1	0	0	0	1	1	1	1	1	1	1
1	0	0	1	1	1	1	1	0	1	1
1	0	1	0	1	1	1	0	1	1	1
1	0	1	1	0	0	1	1	1	1	1
1	1	0	0	1	0	1	1	1	1	0
1	1	0	1	0	1	1	1	1	0	1
1	1	1	0	1	0	1	1	1	1	1
1	1	1	1	1	0	0	0	1	1	1

$AB \backslash CD$	00	01	11	10
00	1	0	1	1
01	0	1	0	1
11	1	1	1	0
10	1	1	1	1

$$a = A\bar{B}\bar{C} + \bar{A}C + BC + A\bar{C}\bar{D} + \bar{B}\bar{D} + \bar{A}BD$$

Optimizăm analog cu funcția a pentru celelalte segmente.