

Electrónica digital
 Laboratorio 4

EJERCICIO 1

Tarea No. 1

A	B	C	y
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

	AB			
C	00	01	11	10
0	1	1	0	1
1	0	0	1	1

$$y = \bar{A}\bar{C} + AC + A\bar{B}$$

Tarea No 2

A	B	C	y
0	0	0	1
0	0	1	x
0	1	0	0
0	1	1	0
1	0	0	x
1	0	1	1
1	1	0	0
1	1	1	0

	AB			
C	00	01	11	10
0	1	0	0	x
1	x	0	0	1

$$y = \bar{B}$$



Таблица 3

A	B	C	D	y
0	0	0	0	1
0	0	0	1	0
0	0	1	0	1
0	0	1	1	0
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

	AB			
CD	00	01	11	10
00	1	0	1	0
01	0	1	0	1
11	1	0	1	0
10	0	1	0	1

$$y = A'B'C'D' + ABC'D' + A'BC'D + AB'C'D + A'B'CD + ABCD + A'BCD' + AB'CD'$$

Таблица No. 4

A	B	C	D	y
0	0	0	0	x
0	0	0	1	x
0	0	1	0	x
0	0	1	1	x
0	1	0	0	x
0	1	0	1	x
0	1	1	0	x
0	1	1	1	x
1	0	0	0	1
1	0	0	1	1
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

	AB			
CD	00	01	11	10
00	x	0	1	1
01	x	x	1	0
11	0	x	1	1
10	x	0	x	x

$$y = A\bar{C}\bar{D} + BD + AC$$

EJERCICIO 2

1) $y = A \cdot B \cdot C \cdot \bar{D} + A \cdot B \cdot C \cdot D + (A + B + C + D)$

A	B	C	D	1	2	3	y
0	0	0	0	0	0	1	1
0	0	0	1	0	0	0	0
0	0	1	0	0	0	0	0
0	0	1	1	0	0	0	0
0	1	0	0	0	0	0	0
0	1	0	1	0	0	0	0
0	1	1	0	0	0	0	0
0	1	1	1	0	0	0	0
1	0	0	0	0	1	0	1
1	0	0	1	0	1	0	1
1	0	1	0	0	1	0	1
1	0	1	1	0	1	0	1
1	1	0	0	0	1	0	1
1	1	0	1	0	1	0	1
1	1	1	0	0	1	0	1
1	1	1	1	0	1	0	1

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

$$y = \bar{B}\bar{C}\bar{D} + A\bar{C} + A\bar{B} + ACD'$$

A	B	C	D	y
x	0	0	0	1
1	x	0	x	0
1	0	x	x	1
1	x	1	0	0

2) $y = \bar{A} \cdot B \cdot C + \bar{B} \cdot \bar{C} + B \cdot C$

A	B	C	1	2	3	y
0	0	0	0	1	0	1
0	0	1	0	1	0	0
0	1	0	0	0	1	1
0	1	1	0	1	0	1
1	0	0	0	1	0	1
1	0	1	0	1	0	0
1	1	0	0	0	1	1
1	1	1	0	1	1	1

C \ AB	00	01	11	10
0	1	0	0	1
1	1	1	1	1

$$y = \bar{B} + C$$

A	B	C	y
x	0	x	1
x	x	1	1

$$3. y = (A + B + C + D) + A \cdot D + B$$

A	B	C	D	1	2	y
0	0	0	0	0	0	0
0	0	0	1	0	0	0
0	0	1	0	0	0	0
0	0	1	1	0	0	0
0	1	0	0	0	1	1
0	1	0	1	0	1	1
0	1	1	0	0	1	1
0	1	1	1	0	1	1
1	0	0	0	0	0	0
1	0	0	1	0	0	0
1	0	1	0	0	1	1
1	0	1	1	0	1	1
1	1	0	0	0	1	1
1	1	0	1	0	1	1
1	1	1	0	0	1	1
1	1	1	1	0	1	1

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

$$y = B + AD$$

A	B	C	D	y
x	1	x	x	1
1	x	x	1	1

$$4. y = B \cdot C + \bar{A} \cdot \bar{B} \cdot \bar{C} + B \cdot \bar{C}$$

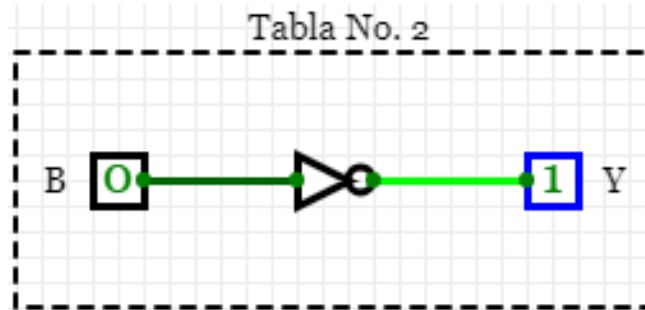
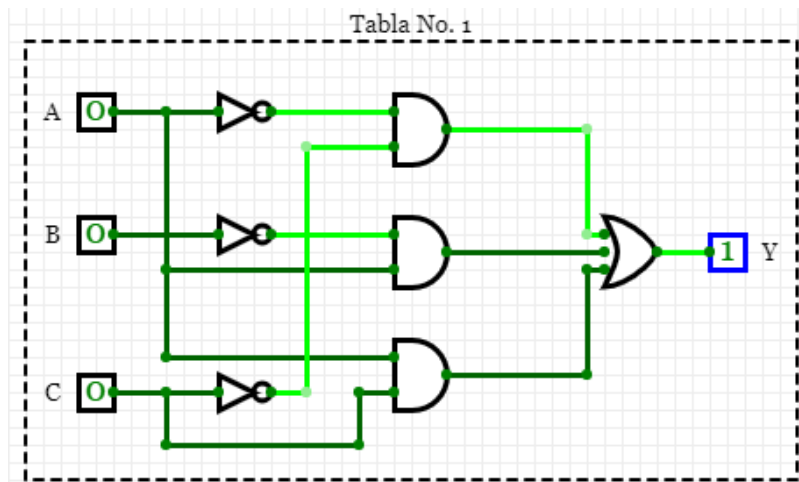
A	B	C	1	2	3	y
0	0	0	0	1	0	1
0	0	1	0	0	0	0
0	1	0	0	0	1	1
0	1	1	0	0	0	0
0	0	0	0	0	0	0
1	0	0	0	0	0	0
1	0	1	0	0	1	1
1	1	0	0	0	0	1
1	1	1	1	0	0	1

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

$$y = \bar{A} \bar{C} + AB$$

A	B	C	y
0	x	0	1
1	1	x	1

EJERCICIO 3 y 4



Código TABLA_1 y TABLA_2

A	B	C	Y	Y1
0	0	0	1	1
0	0	1	0	1
0	1	0	1	0
0	1	1	0	0
1	0	0	1	1
1	0	1	1	1
1	1	0	0	0
1	1	1	1	0

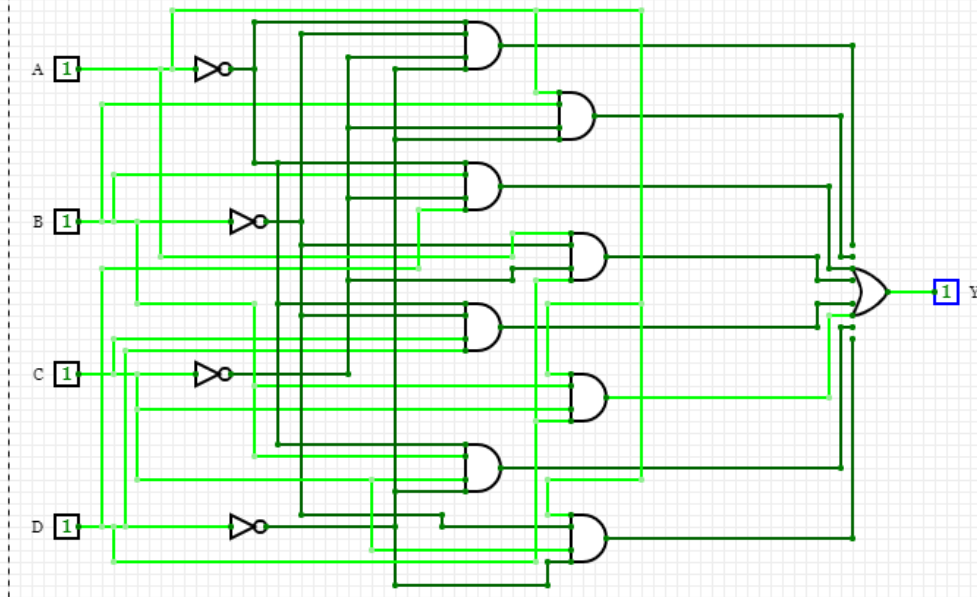
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Settings | Lab_4.v | 01_TABLA_POS.v | Telemetry Consent | Lab_4.tb.v
6 // Ecuación a implementar y = (A' * C') + (A * C) + (A * B')
7
8 module TABLA_1(input wire A, B, C, output wire Y); // Generar y nombre
9
10
11 wire u1, u2, u3, u4, u5, u6; // Nombres de los cables
12
13 // Declaración de las compuertas
14 not(u1, A);
15 not(u2, B);
16 not(u3, C);
17 and(u4, u1, u3);
18 and(u5, A, C);
19 and(u6, A, u2);
20 or(Y, u4, u5, u6);
21
22 endmodule
23
24
25 // Ecuación a implementar Y1 = B'
26
27 module TABLA_2(input wire A, B, C, output wire Y1); // Nombres de l
28
29 // Declaración de las compuertas
30 not(Y1, B);
31
32 endmodule
33
34
35 //-----Valerie Valdez-----
36
37 module testbench();
38
39 // TABLA_1 Y TABLA_2
40 reg s1, s2, s3;
41 wire led1, led2;
42
43 TABLA_1 G1(s1,s2,s3, led1);
44 TABLA_2 G2(s1,s2,s3, led2);
45
46 initial begin
47     $display("A B C | Y Y1");
48     $display("-----|---");
49     $monitor("%b %b %b | %b %b", s1,s2,s3, led1, led2);
50
51     s1 = 0; s2 = 0; s3 = 0;
52     #1 s1 = 0; s2 = 0; s3 = 1;
53     #1 s1 = 0; s2 = 1; s3 = 0;
54     #1 s1 = 0; s2 = 1; s3 = 1;
55     #1 s1 = 1; s2 = 0; s3 = 0;
56     #1 s1 = 1; s2 = 0; s3 = 1;
57     #1 s1 = 1; s2 = 1; s3 = 0;
58     #1 s1 = 1; s2 = 1; s3 = 1;
59
60 end
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Activar Window

Tabla No. 3



A	B	C	D	Y
0	0	0	0	1
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	1
0	1	1	0	1
0	1	1	1	0
1	0	0	0	0
1	0	0	1	1
1	0	1	0	1
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	1

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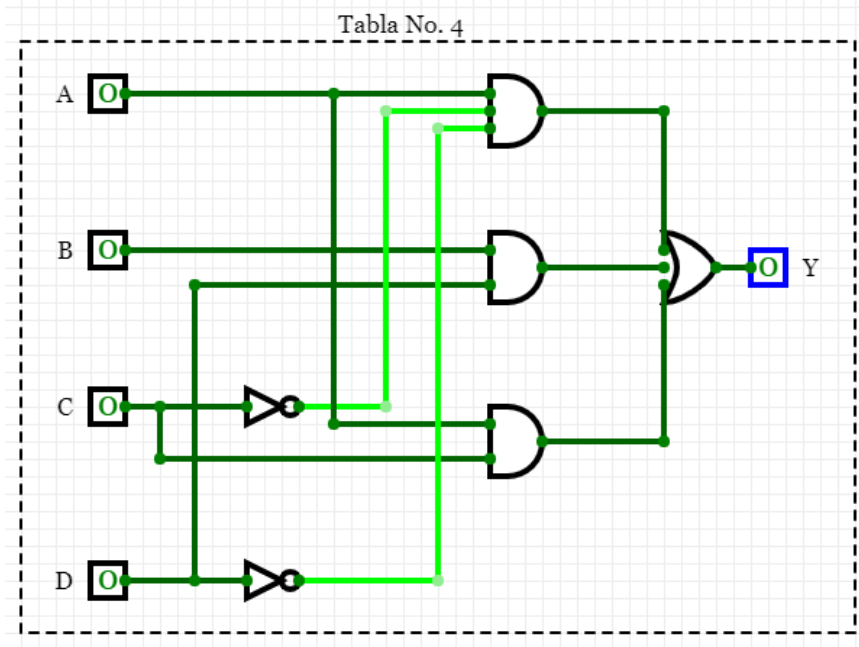
37 module TABLA_3(input wire A, B, C, D, output wire Y);
38
39
40 assign Y = (~A & ~B & ~C & ~D) | (A & B & ~C & ~D) | (~A & B & ~C & D) | (A & ~B & ~C & D) | (~A & ~B & C & D) | (A & B & C & D) | (~A & B & C & ~D) | (A & ~B & C & ~D);
41
42 endmodule
43

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Lab_4_tb.v
28
29 // TABLA_3
30 reg t1, t2, t3, t4;
31 wire led3;
32
33 TABLA_3 G3 (t1,t2,t3,t4, led3);
34
35 initial begin
36     #8
37     $display("\n");
38     $display("A B C D | Y ");
39     $display("-----|---");
40     $monitor("%b %b %b %b | %b", t1,t2,t3,t4, led3);
41
42     t1 = 0; t2 = 0; t3 = 0; t4 = 0;
43     #1 t1 = 0; t2 = 0; t3 = 0; t4 = 1;
44     #1 t1 = 0; t2 = 0; t3 = 1; t4 = 0;
45     #1 t1 = 0; t2 = 0; t3 = 1; t4 = 1;
46     #1 t1 = 0; t2 = 1; t3 = 0; t4 = 0;
47     #1 t1 = 0; t2 = 1; t3 = 0; t4 = 1;
48     #1 t1 = 0; t2 = 1; t3 = 1; t4 = 0;
49     #1 t1 = 0; t2 = 1; t3 = 1; t4 = 1;
50     #1 t1 = 1; t2 = 0; t3 = 0; t4 = 0;
51     #1 t1 = 1; t2 = 0; t3 = 0; t4 = 1;
52     #1 t1 = 1; t2 = 0; t3 = 1; t4 = 0;
53     #1 t1 = 1; t2 = 0; t3 = 1; t4 = 1;
54     #1 t1 = 1; t2 = 1; t3 = 0; t4 = 0;
55     #1 t1 = 1; t2 = 1; t3 = 0; t4 = 1;
56     #1 t1 = 1; t2 = 1; t3 = 1; t4 = 0;
57     #1 t1 = 1; t2 = 1; t3 = 1; t4 = 1;
58

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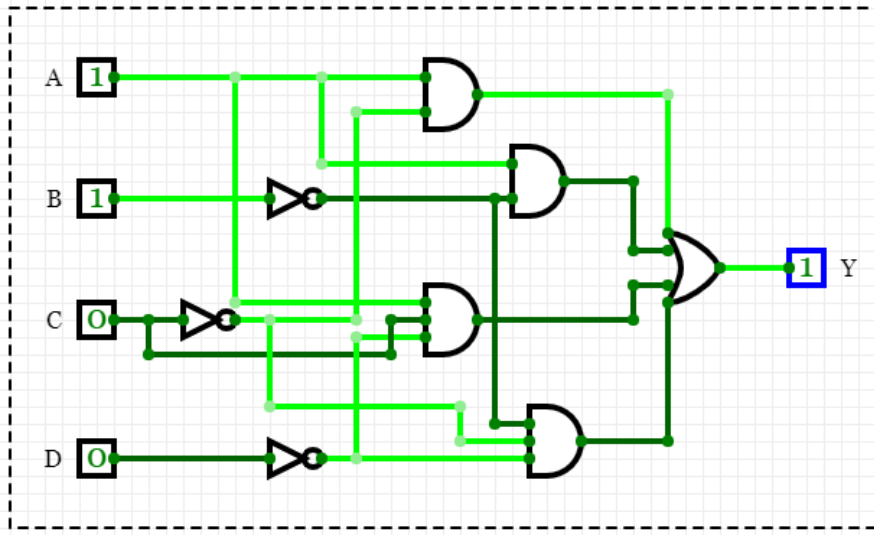
A	B	C	D	Y
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	0
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

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43 //Ecuación a implementar Y = AC'D' + BD + AC
44
45 module TABLA_4(input wire A, B, C, D, output wire Y);
46
47 wire w1, w2, w3, w4, w5;
48
49 not(w1, C);
50 not(w2, D);
51 and(w3, A,w1,w2);
52 and(w4, B,D);
53 and(w5, A,C);
54 or(Y, w3,w4,w5);
55
56 endmodule
57
58 // Ecuación a implementar Y = B'C'D' + AC' + AB' + ACD
59 module TABLA_5(input wire A, B, C, D, output wire Y1);
60
61 wire r1, r2, r3, r4, r5, r6, r7;
62
63 not(r1, B);
64 not(r2, C);
65 not(r3, D);
66 and(r4, r1,r2,r3);
67 and(r5, A,r2);
68 and(r6, A,r1);
69 and(r7, A,C,r3);
70 or(Y1, r4,r5,r6,r7);
71
72 endmodule
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Tabla No. 2.1

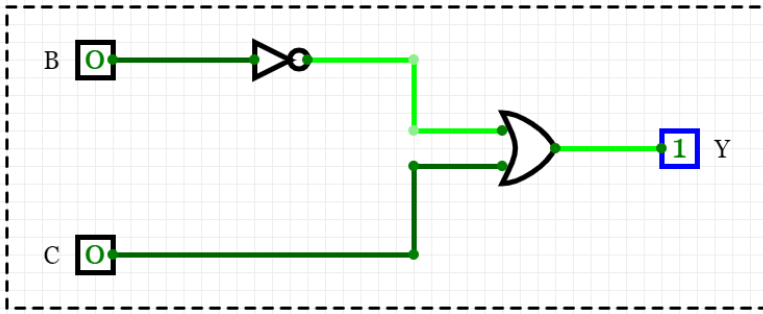


A	B	C	D	Y	Y1
0	0	0	0	0	1
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44
45 //Ecuación a implementar Y = AC'D' + BD + AC
46
47 module TABLA_4(input wire A, B, C, D, output wire Y);
48
49 wire w1, w2, w3, w4, w5;
50
51 not(w1, C);
52 not(w2, D);
53 and(w3, A,w1,w2);
54 and(w4, B,D);
55 and(w5, A,C);
56 or(Y, w3,w4,w5);
57
58 endmodule
59
60
61 //Ecuación a implementar Y = B'C'D' + AC' + AB' + ACD
62 module TABLA_5(input wire A, B, C, D, output wire Y1);
63
64 wire r1, r2, r3, r4, r5, r6, r7;
65
66 not(r1, B);
67 not(r2, C);
68 not(r3, D);
69 and(r4, r1,r2,r3);
70 and(r5, A,r2);
71 and(r6, A,r1);
72 and(r7, A,C,r3);
73 or(Y1, r4,r5,r6,r7);
74
75 endmodule
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Tabla No. 2.2



A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0

```

not(r2, C);
not(r3, D);
and(r4, r1,r2,r3);
and(r5, A,r2);
and(r6, A,r1);
and(r7, A,C,r3);
or(Y1, r4,r5,r6,r7);

endmodule

// Ecuación a implementar Y = B' + C
module TABLA_6(input wire A, B, C, output wire Y);

assign Y = (~B) | (C);

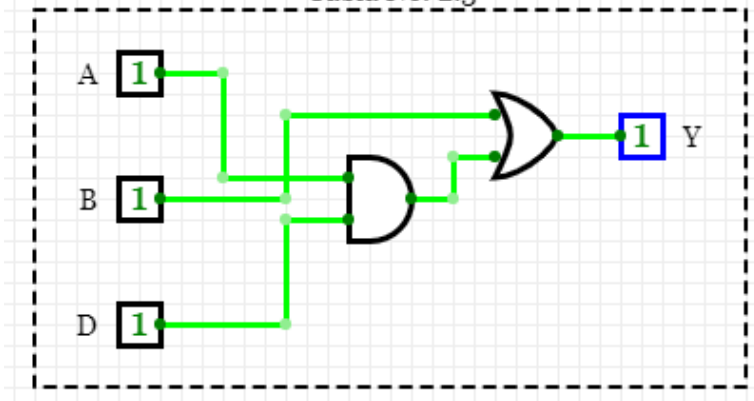
endmodule

// Ecuación a implementar Y = B + AD
module TABLA_7(input wire A, B, C, D, output wire Y);

assign Y = (B) | (A & D);

```

Tabla No. 2.3



A	B	C	D	Y
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	0
0	1	0	0	1
0	1	0	1	1
0	1	1	0	1
0	1	1	1	1
1	0	0	0	0
1	0	0	1	1
1	0	1	0	0
1	0	1	1	1
1	1	0	0	1
1	1	0	1	1
1	1	1	0	1
1	1	1	1	1

```

85
86 // Ecuación a implementar  $Y = B + AD$ 
87
88 module TABLA_7(input wire A, B, C, D, output wire Y);
89
90 assign Y = (B | (A & D));
91
92 endmodule
93

```

```

// TABLA_7
reg d1, d2, d3, d4;
wire led7;

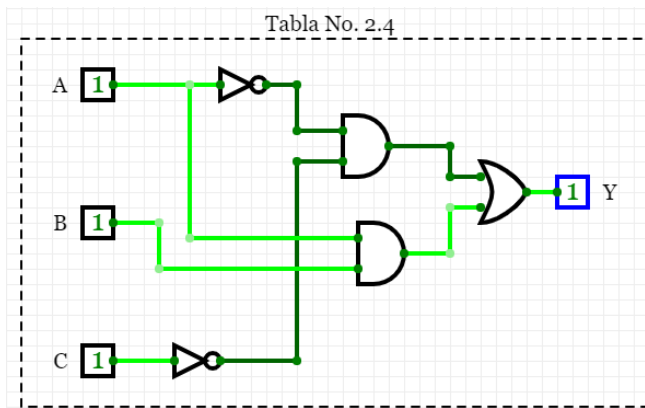
TABLA_7 G7(d1,d2,d3,d4, led7);

initial begin
    #47
    $display("\n");
    $display("A B C D | Y");
    $display("-----|----");
    $monitor("%b %b %b %b | %b", d1,d2,d3,d4, led7);

    d1 = 0; d2 = 0; d3 = 0; d4 = 0;
    #1 d1 = 0; d2 = 0; d3 = 0; d4 = 1;
    #1 d1 = 0; d2 = 0; d3 = 1; d4 = 0;
    #1 d1 = 0; d2 = 0; d3 = 1; d4 = 1;
    #1 d1 = 0; d2 = 1; d3 = 0; d4 = 0;
    #1 d1 = 0; d2 = 1; d3 = 0; d4 = 1;
    #1 d1 = 0; d2 = 1; d3 = 1; d4 = 0;
    #1 d1 = 0; d2 = 1; d3 = 1; d4 = 1;
    #1 d1 = 1; d2 = 0; d3 = 0; d4 = 0;
    #1 d1 = 1; d2 = 0; d3 = 0; d4 = 1;
    #1 d1 = 1; d2 = 0; d3 = 1; d4 = 0;
    #1 d1 = 1; d2 = 0; d3 = 1; d4 = 1;
    #1 d1 = 1; d2 = 1; d3 = 0; d4 = 0;
    #1 d1 = 1; d2 = 1; d3 = 0; d4 = 1;
    #1 d1 = 1; d2 = 1; d3 = 1; d4 = 0;
    #1 d1 = 1; d2 = 1; d3 = 1; d4 = 1;

end

```



A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

```

95 // Ecuación a implementar  $Y = A'C' + AB$ 
96 module TABLA_8(input wire A, B, C, output wire Y);
97
98 assign Y = (~A & ~C) | (A & B);
99
100 endmodule
101

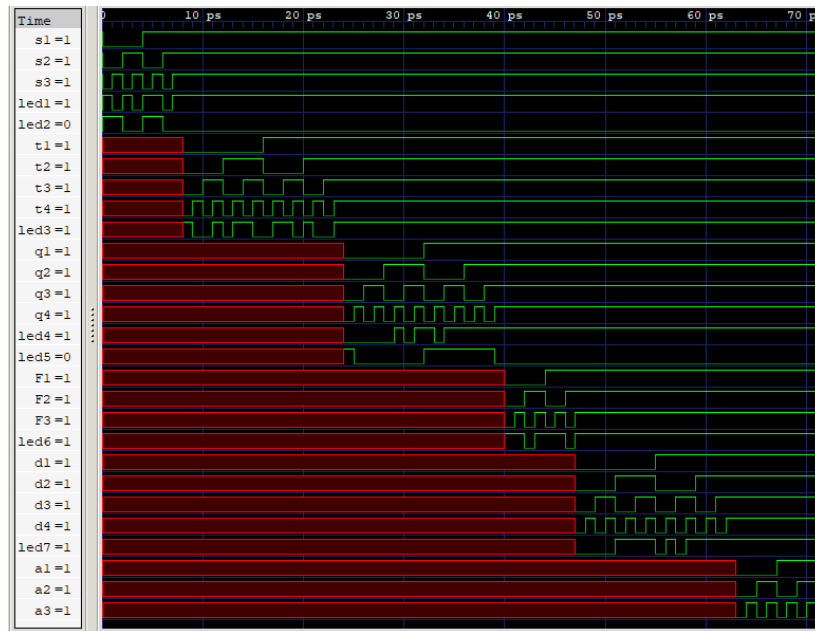
```

```

153
154 //TABLA_8
155 reg a1, a2, a3;
156 wire led8;
157
158 TABLA_8 G8(a1,a2,a3, led8);
159
160 initial begin
161     #63
162     $display("\n");
163     $display("A B C | Y");
164     $display("-----|----");
165     $monitor("%b %b %b | %b", a1,a2,a3, led8);
166
167     a1 = 0; a2 = 0; a3 = 0;
168     #1 a1 = 0; a2 = 0; a3 = 1;
169     #1 a1 = 0; a2 = 1; a3 = 0;
170     #1 a1 = 0; a2 = 1; a3 = 1;
171     #1 a1 = 1; a2 = 0; a3 = 0;
172     #1 a1 = 1; a2 = 0; a3 = 1;
173     #1 a1 = 1; a2 = 1; a3 = 0;
174     #1 a1 = 1; a2 = 1; a3 = 1;
175
176 end
177
178 endmodule
179

```

DIAGRAMA DE TIMING



EJERCICIO 5

Problema 5

A	B	C	y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

donde A = Armado
B = sensor Mov
C = sensor VIP

SOP

$$y = (A \cdot B' \cdot C') + (A \cdot B \cdot C') + (A \cdot B \cdot C)$$

POS

$$y = (A + B + C) \cdot (A + B + C') \cdot (A + B' + C) \cdot (A + B' + C')$$

AB	00	01	11	10
0	0	0	1	1
1	0	0	1	0

$$y = A \cdot C' + AB$$

A	B	C	y
1	0	0	1
1	1	0	1

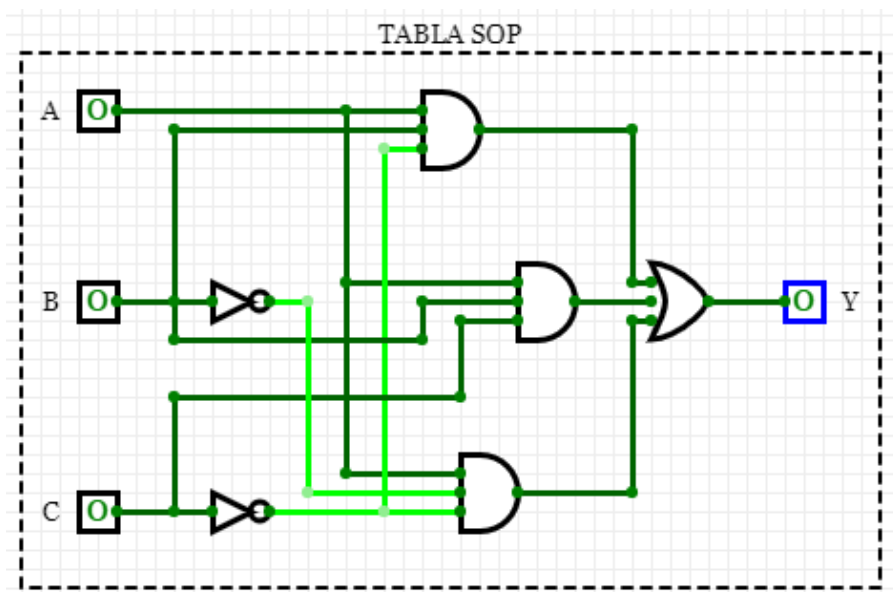


TABLA SOP

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

VCD info: du

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

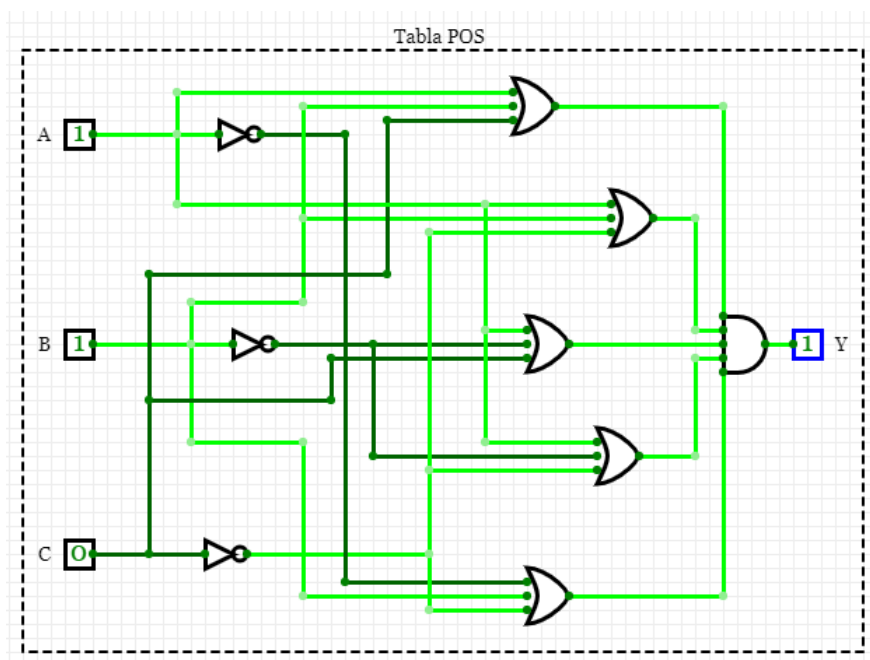


TABLA POS

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

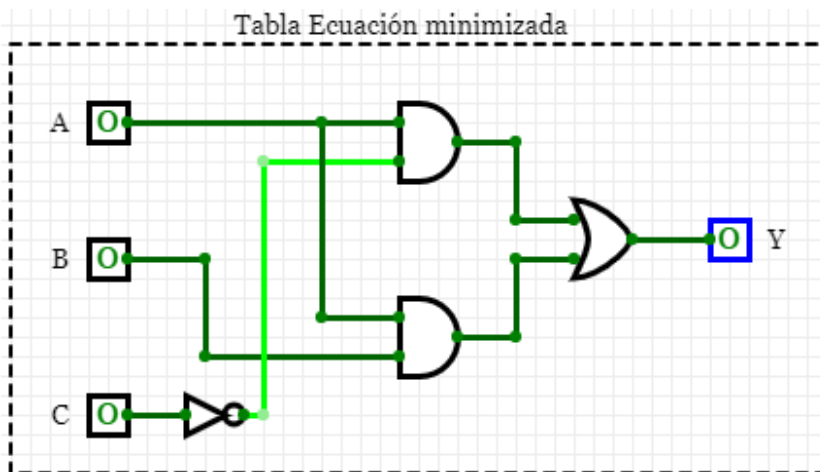
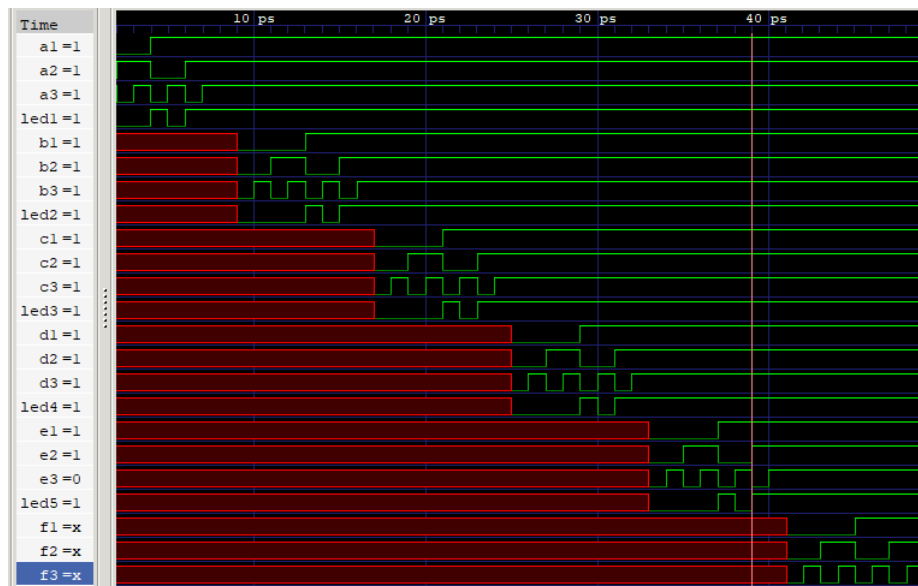


Tabla: ecuacion minimizada

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

Diagrama de Timing



Códigos

Código BM Y GLM de la tabla SOP

Welcome Guide	Problema_5.v	Problema_5.tbv	
<pre>// Electrónica digital // Laboratorio 4, problema 5 //-----Valerie Valdez 19859----- //Tabla SOP con Gate Level modeling module TABLA_SOP_GLM(input wire A, B, C, output wire Y); wire w1, w2, w3, w4, w5; not(w1, B); not(w2, C); and(w3, A,w1,w2); and(w4, A,B,w2); and(w5, A,B,C); or(Y, w3,w4,w5); endmodule //Tabla SOP con Behavioral modelling module TABLA_SOP_BM(input wire A, B, C, output wire Y); assign Y = (A & ~B & ~C) (A & B & ~C) (A & B & C); endmodule //Tabla SOP con Gate Level modeling</pre>	<pre>5 6 module problema_5_tb(); 7 8 // TABLA_SOP_GLM 9 reg a1, a2, a3; 10 wire led1; 11 12 TABLA_SOP_GLM G1(a1,a2,a3, led1); 13 14 initial begin 15 \$display("\n"); 16 \$display("TABLA SOP"); 17 \$display("\n"); 18 \$display("A B C Y"); 19 \$display("----- ---"); 20 \$monitor("%b %b %b %b", a1,a2,a3, led1); 21 22 a1 = 0; a2 = 0; a3 = 0; 23 #1 a1 = 0; a2 = 0; a3 = 1; 24 #1 a1 = 0; a2 = 1; a3 = 0; 25 #1 a1 = 0; a2 = 1; a3 = 1; 26 #1 a1 = 1; a2 = 0; a3 = 0; 27 #1 a1 = 1; a2 = 0; a3 = 1; 28 #1 a1 = 1; a2 = 1; a3 = 0; 29 #1 a1 = 1; a2 = 1; a3 = 1; 30 31 end</pre>	<pre>// Tabla_SOP_BM reg b1, b2, b3; wire led2; TABLA_SOP_BM G2(b1,b2,b3, led2); initial begin #9 \$display("\n"); \$display("A B C Y"); \$display("----- ---"); \$monitor("%b %b %b %b", b1,b2,b3, led2); b1 = 0; b2 = 0; b3 = 0; #1 b1 = 0; b2 = 0; b3 = 1; #1 b1 = 0; b2 = 1; b3 = 0; #1 b1 = 0; b2 = 1; b3 = 1; #1 b1 = 1; b2 = 0; b3 = 0; #1 b1 = 1; b2 = 0; b3 = 1; #1 b1 = 1; b2 = 1; b3 = 0; #1 b1 = 1; b2 = 1; b3 = 1; end</pre>	

Código BM y GLM de la tabla POS

<pre>endmodule //Tabla SOP con Behavioral modelling module TABLA_SOP_BM(input wire A, B, C, output wire Y); assign Y = (A & ~B & ~C) (A & B & ~C) (A & B & C); endmodule //Tabla POS con Gate Level modeling module TABLA_POS_GLM(input wire A,B,C, output wire Y); wire q1, q2, q3, q4, q5, q6, q7, q8; not(q1, A); not(q2, B); not(q3, C); or(q4, A,B,C); or(q5, A,B,q3); or(q6, A,q2,C); or(q7, A,q2,q3); or(q8, q1,B,q3); and(Y, q4,q5,q6,q7,q8); endmodule</pre>	<pre>59 //Tabla Pos con Gate Level modeling 60 reg c1, c2, c3; 61 wire led3; 62 63 TABLA_POS_GLM G3(c1,c2,c3, led3); 64 65 initial begin 66 #17 67 \$display("\n"); 68 \$display("TABLA POS"); 69 \$display("\n"); 70 \$display("A B C Y"); 71 \$display("----- ---"); 72 \$monitor("%b %b %b %b", c1,c2,c3, led3); 73 74 c1 = 0; c2 = 0; c3 = 0; 75 #1 c1 = 0; c2 = 0; c3 = 1; 76 #1 c1 = 0; c2 = 1; c3 = 0; 77 #1 c1 = 0; c2 = 1; c3 = 1; 78 #1 c1 = 1; c2 = 0; c3 = 0; 79 #1 c1 = 1; c2 = 0; c3 = 1; 80 #1 c1 = 1; c2 = 1; c3 = 0; 81 #1 c1 = 1; c2 = 1; c3 = 1; 82 83 end</pre>	<pre>//Tabla Pos con Behavioral Modelling reg d1, d2, d3; wire led4; TABLA_POS_BM G4(d1,d2,d3, led4); initial begin #25 \$display("\n"); \$display("A B C Y"); \$display("----- ---"); \$monitor("%b %b %b %b", d1,d2,d3, led4); d1 = 0; d2 = 0; d3 = 0; #1 d1 = 0; d2 = 0; d3 = 1; #1 d1 = 0; d2 = 1; d3 = 0; #1 d1 = 0; d2 = 1; d3 = 1; #1 d1 = 1; d2 = 0; d3 = 0; #1 d1 = 1; d2 = 0; d3 = 1; #1 d1 = 1; d2 = 1; d3 = 0; #1 d1 = 1; d2 = 1; d3 = 1; end</pre>	

Códigos BM y GLM de la tabla con ecuación minimizada

<pre>//Tabla POS con Behavioral Modelling module TABLA_POS_BM(input wire A,B,C, output wire Y); assign Y = (A B C) & (A B ~C) & (A ~B C) & (A ~B ~C) & (~A B endmodule // Tabla ecuación minimizada con Gate Level Modeling module TABLA_MIN_GLM(input wire A,B,C, output wire Y); wire s1, s2, s3; not(s1, C); and(s2, A,s1); and(s3, A,B); or(Y, s2,s3); endmodule // Tabla ecuación minimizada con Behavioral Modeling module TABLA_MIN_BM(input wire A,B,C, output wire Y); assign Y = (A & ~C) (A & B); endmodule</pre>	<pre>110 // Tabla ecuación minimizada con Gate Level modeling 111 reg e1, e2, e3; 112 wire led5; 113 114 TABLA_MIN_GLM G5(e1,e2,e3, led5); 115 116 initial begin 117 #33 118 \$display("\n"); 119 \$display("Tabla: ecuacion minimizada"); 120 \$display("\n"); 121 \$display("A B C Y"); 122 \$display("----- ---"); 123 \$monitor("%b %b %b %b", e1,e2,e3, led5); 124 125 e1 = 0; e2 = 0; e3 = 0; 126 #1 e1 = 0; e2 = 0; e3 = 1; 127 #1 e1 = 0; e2 = 1; e3 = 0; 128 #1 e1 = 0; e2 = 1; e3 = 1; 129 #1 e1 = 1; e2 = 0; e3 = 0; 130 #1 e1 = 1; e2 = 0; e3 = 1; 131 #1 e1 = 1; e2 = 1; e3 = 0; 132 #1 e1 = 1; e2 = 1; e3 = 1; 133 134 end</pre>	<pre>// Tabla ecuación minimizada con Behavioral Modeling reg f1, f2, f3; wire led6; TABLA_MIN_BM G6(f1,f2,f3, led6); initial begin #41 \$display("\n"); \$display("A B C Y"); \$display("----- ---"); \$monitor("%b %b %b %b", f1,f2,f3, led6); f1 = 0; f2 = 0; f3 = 0; #1 f1 = 0; f2 = 0; f3 = 1; #1 f1 = 0; f2 = 1; f3 = 0; #1 f1 = 0; f2 = 1; f3 = 1; #1 f1 = 1; f2 = 0; f3 = 0; #1 f1 = 1; f2 = 0; f3 = 1; #1 f1 = 1; f2 = 1; f3 = 0; #1 f1 = 1; f2 = 1; f3 = 1; end initial #49 \$finish; initial begin \$dumpfile("Problema_5_tb.vcd"); \$dumpvars(0, problema_5_tb); end endmodule</pre>	