

Laboratorio #4

Ejercicio 1

Tabla 1

$\begin{matrix} A \\ B \end{matrix}$	00	01	11	10
0	1	1	0	1
1	0	0	1	1

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

Tabla 2

$\begin{matrix} A \\ B \end{matrix}$	00	01	11	10
0	1	0	0	X
1	X	0	0	1

$$\bar{B}$$

Tabla 3

$\begin{matrix} A \\ B \end{matrix}$	00	01	11	10
00	1	0	1	0
01	0	1	0	1
11	1	0	1	0
10	0	1	0	1

$$A\bar{B}\bar{C}\bar{D} + A\bar{B}C\bar{D} + \bar{A}B\bar{C}D + \bar{A}B\bar{C}\bar{D} \\ + \bar{A}\bar{B}CD + A\bar{B}CD + \bar{A}BC\bar{D} + \bar{A}BCD$$

2. $Y = \bar{A}BC + \bar{B}\bar{C} + BC$

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
1	1	1	1

~~AB~~

0	0	1	1	1	0
0	1	0	0	1	
1	0	1	1	1	1

$C + \bar{B}$

A B C | Y

0	0	X	1
X	1	0	0
X	1	1	1
1	0	X	1

3. $Y = (\bar{A} + \bar{B} + \bar{C} \cdot D) + AD + B$

A B C D | Y

0	0	0	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	1	0
0	1	0	0	1
0	1	0	1	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

~~AB~~

0	0	0	1	1	0
0	1	1	1	1	
0	1	1	1	1	
1	0	1	1	1	
1	0	1	1	0	

$B + \bar{C}D + AD$

A B C D | Y

0	0	0	0	0
0	0	0	1	1
0	0	1	X	0
0	1	X	X	1
1	0	X	0	0
1	0	X	1	1
1	1	X	X	1

Tabla 4

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

$$AB + AC + A\bar{D}$$

Ejercicio 2

$$Y = ABCD + A\bar{B}CD + (A+B+C+D)$$

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

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

$$AB + AC + AD + BCD //$$

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

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

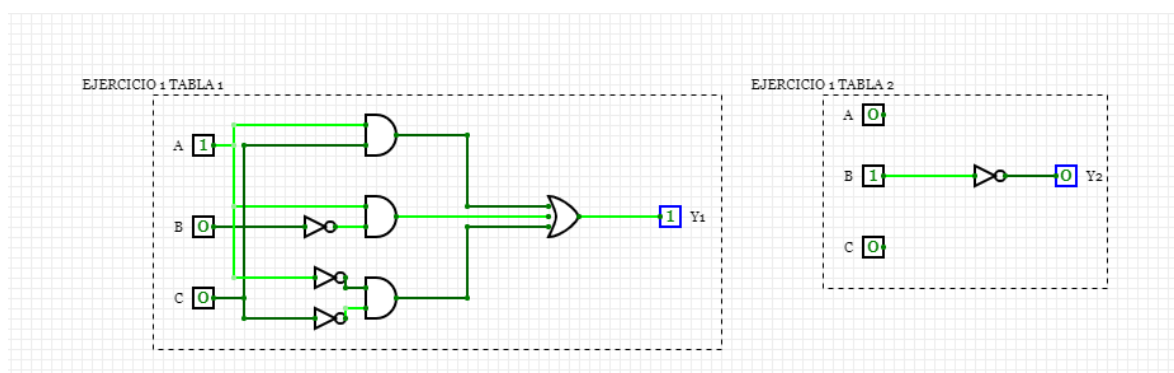
A	B	C	Y
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	0
1	1	0	1
1	1	1	1

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

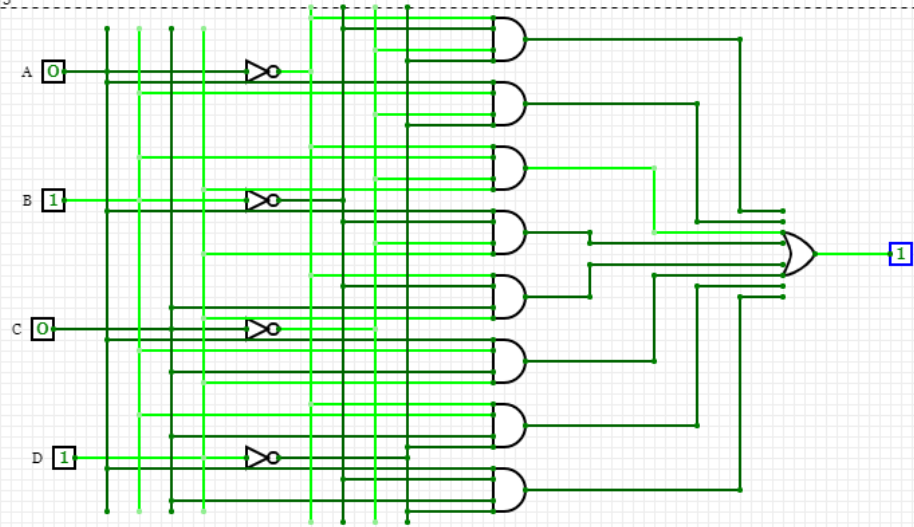
Handwritten notes on the grid:

- Red box around the first row of the truth table: $\bar{A} \cdot \bar{B} \cdot \bar{C}$
- Blue box around the last two rows of the truth table: $B \cdot \bar{C}$
- Red box around the first two rows of the truth table: $\bar{A} \cdot \bar{B}$
- Red box around the last two rows of the truth table: B

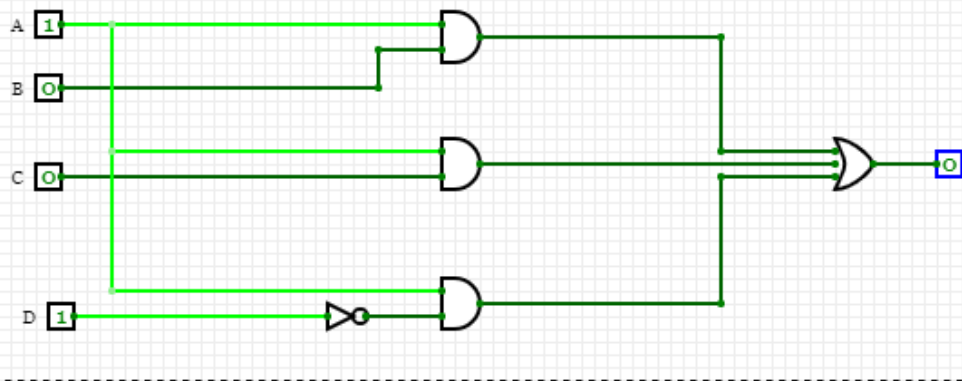
Ejercicio 3



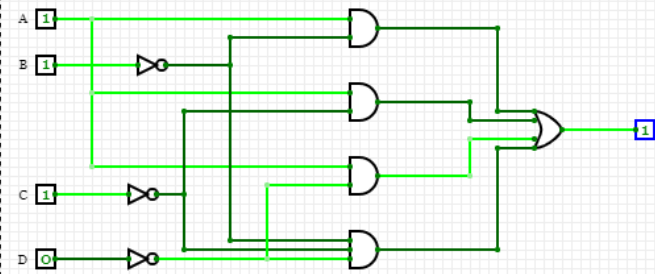
EJERCICIO 1 TABLA 3



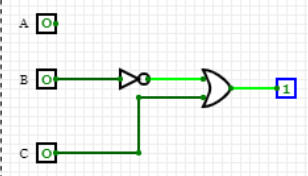
EJERCICIO 1 TABLA 4



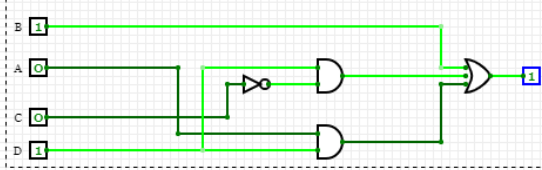
EJERCICIO 2 TABLA 1



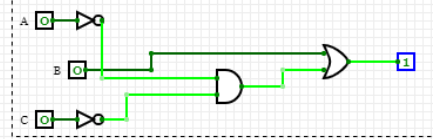
EJERCICIO 2 TABLA 2



EJERCICIO 2 TABLA 3



EJERCICIO 2 TABLA 4



Ejercicio 5

Ejercicio 5
Armada/Desarmada

A ☐ Ventana/Puerta

B ☐ Sensor movimiento

C ☐ Alarma Y

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

SOP

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

POS

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

$(A'+B'+C)$

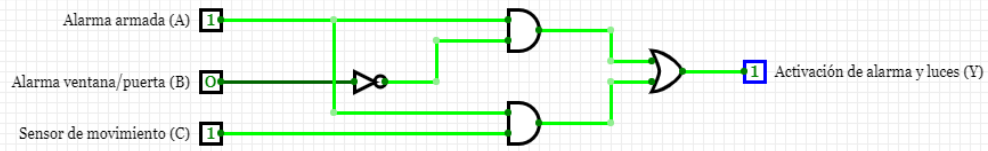
A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

CS Escaneado con CamScanner

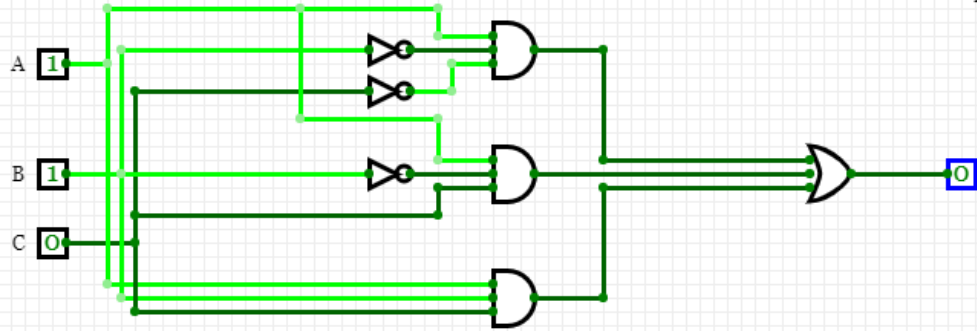
AB	00	01	11	10
0	0	0	0	1
1	0	0	1	1

$AB' + AC = Y$

EJERCICIO 5 Mapa Karnaugh



EJERCICIO 5 SOP



EJERCICIO 5 POS

