

Progetto di un moltiplicatore binario a due bit

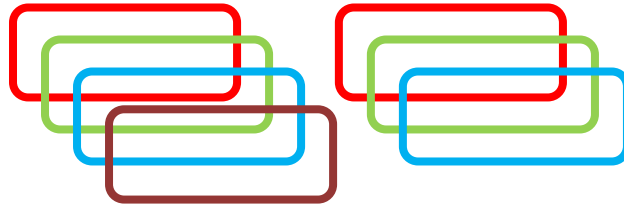
Biundo Mattia 19/10/2022

1) Tavola di verità:

A1	A0	B1	B0	P3	P2	P1	P0
0	0	0	0	0	0	0	0
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	1
0	1	1	0	0	0	1	0
0	1	1	1	0	0	1	1
1	0	0	0	0	0	0	0
1	0	0	1	0	0	1	0
1	0	1	0	0	1	0	0
1	0	1	1	0	1	1	0
1	1	0	0	0	0	0	0
1	1	0	1	0	0	1	1
1	1	1	0	0	1	1	0
1	1	1	1	1	0	0	1

...segue...

2) Mappe di Karnaugh:



Funzione:

P3

			B1	
	0	0	0	0
	0	0	0	0
B0	0	0	1	0
	0	0	0	0
			A0	

A1

$$P3 = A0 A1 B0 B1$$

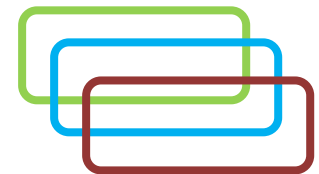
$$P2 = A1 B1 !B0 + !A0 A1 B0 B1$$

Funzione:

P2

			B1	
	0	0	0	0
	0	0	1	1
B0	0	0	0	1
	0	0	0	0
			A0	

A1



Funzione:

P1

			B1	
	0	0	1	0
	0	0	1	0
B0	1	1	0	1
	0	0	1	0
			A0	

A1

$$P1 = A0 !B0 B1 + !A0 A1 B0 B1 + A1 B0 !B1 + A0 !A1 B0 B1$$

$$P0 = A0 B0$$

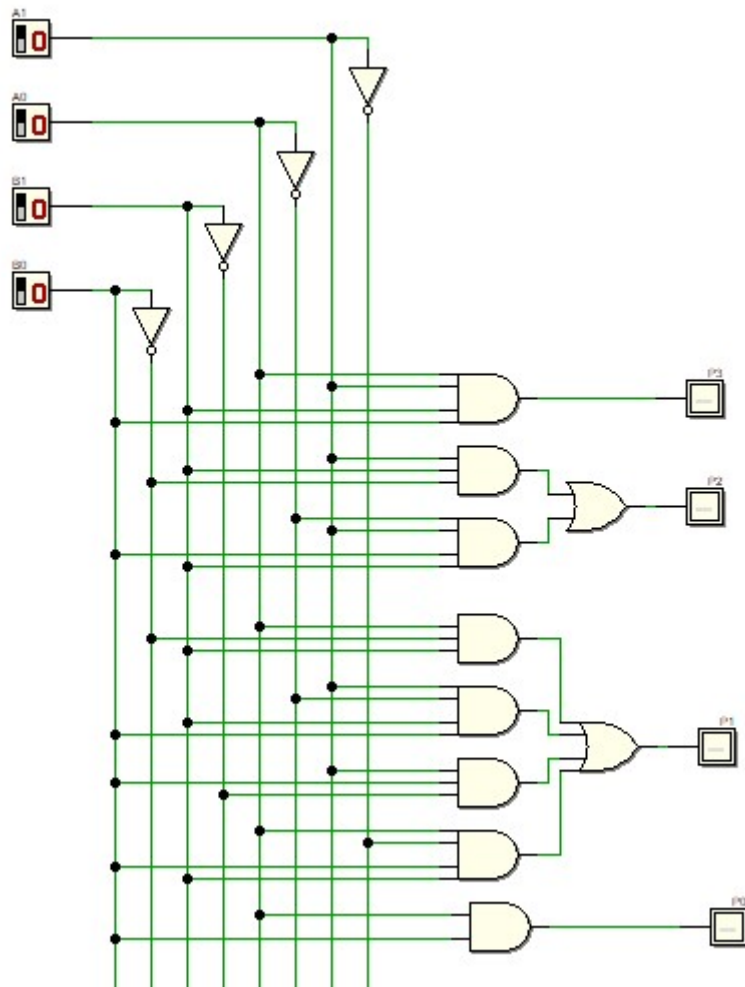
Funzione:

P0

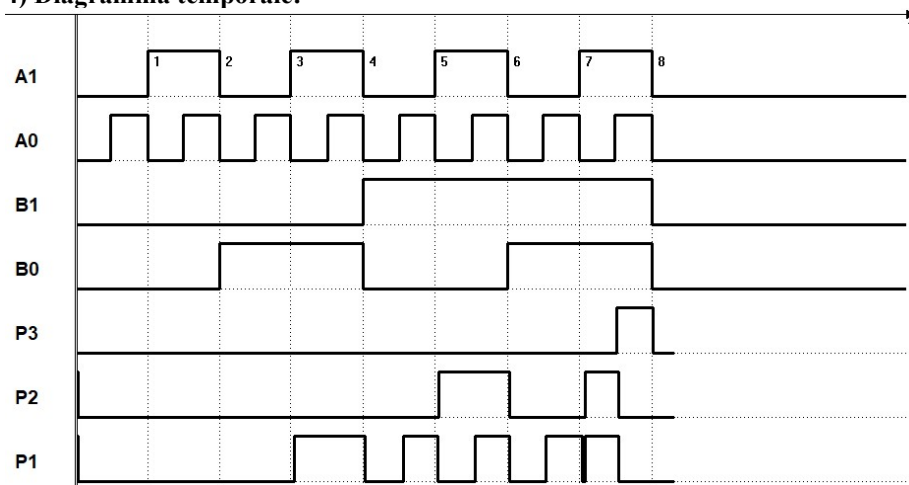
			B1	
	0	0	0	0
	0	0	0	0
B0	0	1	1	0
	0	1	1	0
			A0	

A1

3) Schema del circuito:



4) Diagramma temporale:



5) Eventuali commenti:

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