4 Realization of Combinatorial Logic

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Table of Contents

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In the last chapter we investigated the Therm-o-Safety example. From this, it was possible to create the logic formula via sum of products of products of sums.

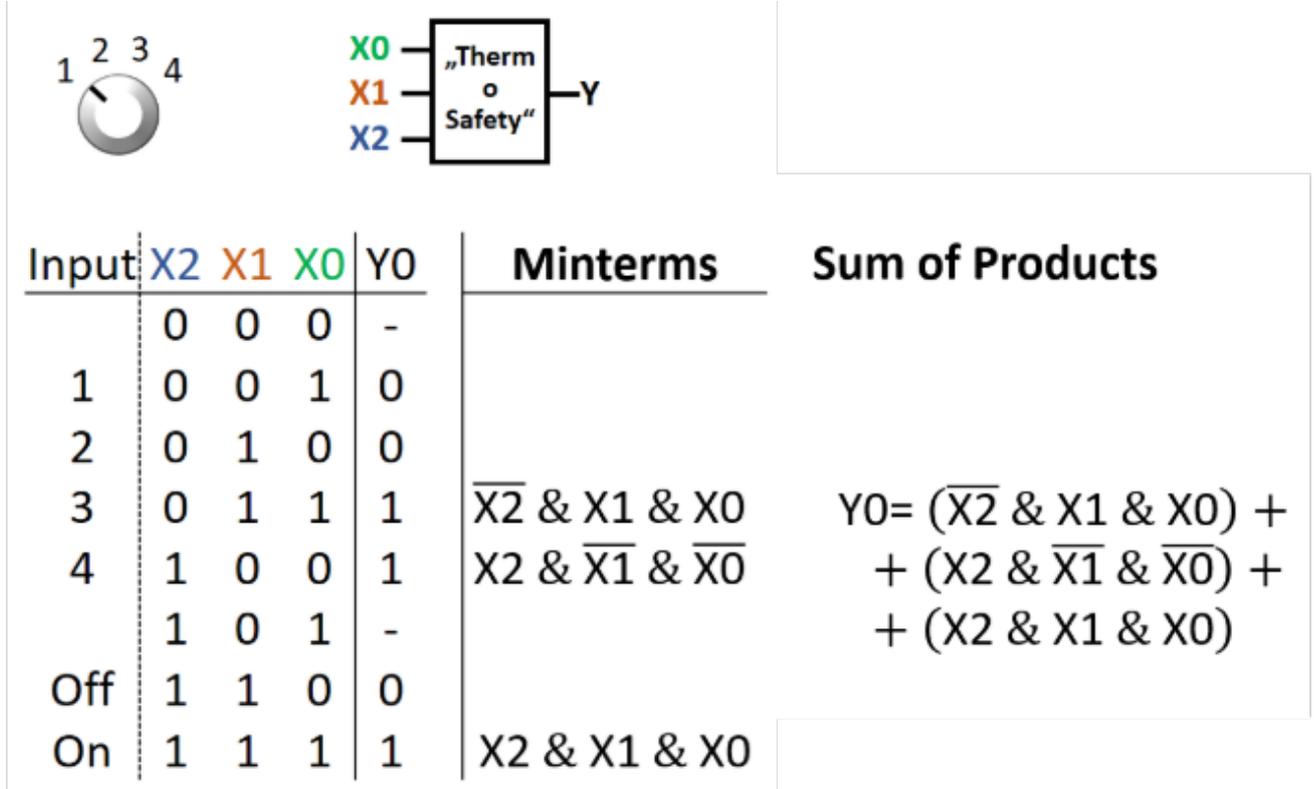Fig. 1: gate logic from Therm-o-Safety example: Formula

Input	X2	X1	X0	Y0	Minterms	Sum of Products
	0	0	0	-		
1	0	0	1	0		
2	0	1	0	0		
3	0	1	1	1	$\overline{X2}$ & X1 & X0	
4	1	0	0	1	X2 & $\overline{X1}$ & $\overline{X0}$	
	1	0	1	-		
Off	1	1	0	0		
On	1	1	1	1	X2 & X1 & X0	

$$Y0 = (\overline{X2} \& X1 \& X0) + \\ + (X2 \& \overline{X1} \& \overline{X0}) + \\ + (X2 \& X1 \& X0)$$

Fig. 1: gate logic from Therm-o-Safety example: Gate Logic

Gate Logic
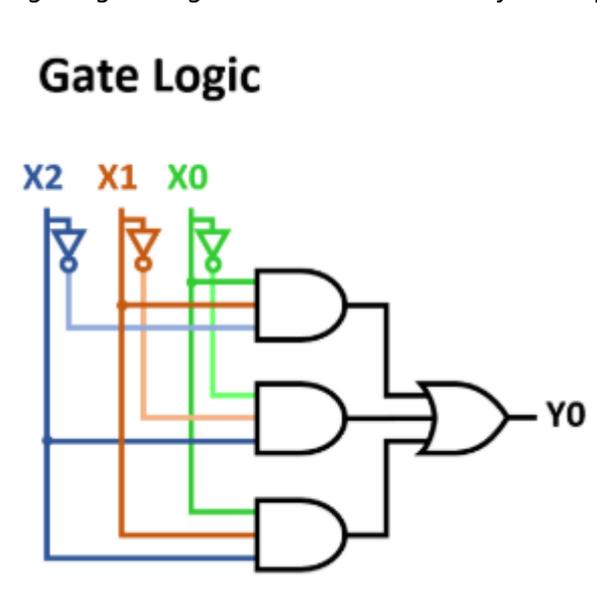
Fig. ##: Simulation of an Inverter