Day: M T W T F S

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LAB Manual #4

Objectives

Decimal to binary expression
Simulation on logicly
Decimal to binary
Binary to decimal
Minterm & Maxterm & k-maping.

Minterm (SoP):

In min-term the product of input variables such that value of product is '1':

$(A \cdot B \cdot C) + (C \cdot D \cdot F)$

1

Maxterm (PoS)

In maxterm the sum of input variables such that total value of sum is '0',

$(A+B+C) \cdot (C+D+F)$

0

Implimentation on truth table

x	y	Minterm	Maxterm
0	0	$m = x'y'$	$M_0 = x+y$
0	1	$m_1 = y'.y$	$M_1 = x+y'$
1	0	$m_2 = xy'$	$M_2 = x'+y$
1	1	$m_3 = xy$	$M_3 = x'+y'$

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Karnaugh Map

The method was derived from American Scientist Karnaugh.

for (n) variables K-map cells = 2^n are required.

A \ B	0	1
0	00	01
1	10	11

A \ B	B'	B
A'	A'B'	A'B
A	AB'	AB

A \ B	0	1
0	m_0	m_1
1	m_2	m_3

A \ B	0	1
	2	3

Binary to Decimal

$(101101)_2$

$= 1\times2^5 + 0\times2^4 + 1\times2^3 + 1\times2^2 + 0\times2^1 + 1\times2^0$

$= 32 + 0 + 8 + 4 + 0 + 1$

$= (45)_{10}$

Instruments used in experiment

Software logically is used during simulation.

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Conclusion:

In this lab we learnt about Min & Max term and k-maping how to use them during circuits simulation And learnt decimal to binary.