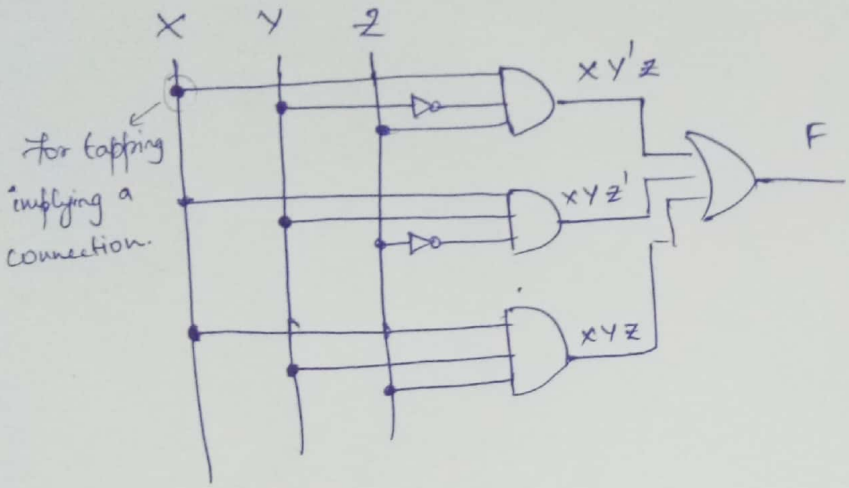
DIGITAL SYSTEMS

31/01/2019

Thursday

LOGIC MINIMIZATION

$F(x,y,z) = xy'z + xyz' + xyz.$



$F = xy'z + xyz + xyz'$

$= xz(y+y') + xyz'$

$= xz + xyz'$

$= x(z + yz')$

$= x(z+y)$

(OR) $F = xy'z + xyz' + xyz + xyz$

$= xz(y+y') + xy(z+z')$

$= xz + xy.$

$m_0 - x'y'z'$

$m_1 - x'y'z$

$m_2 - x'yz'$

$m_3 - x'yz$

$m_4 - xy'z'$

$m_5 - xy'z$

$m_6 - xyz'$

$m_7 - xyz.$

For two variables.

$F(x,y) \rightarrow x'y' \quad x'y \quad xy' \quad xy.$

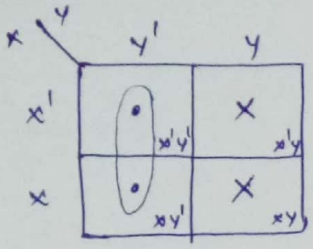
$x'y' \quad x'y$

$xy' \quad xy$

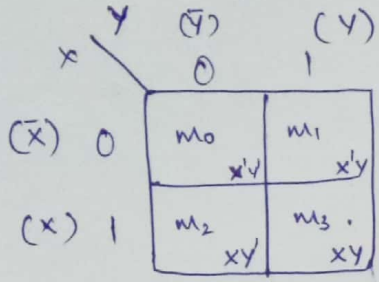
⇒

x \ y	y'	y
x'	x'y'	x'y
x	xy'	xy

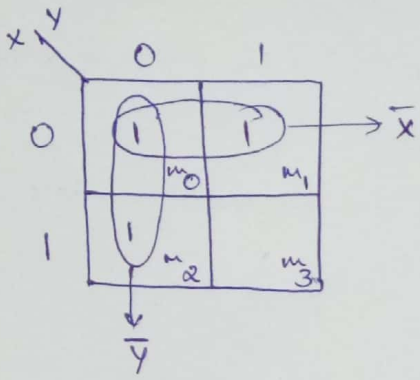
Let $F(x,y) = \sum m(0,2) = x'y' + xy' = y'(x+x') = y'$



$\Rightarrow y'$ (The variable common to the miaterms in the enclosure)



Let $F(x,y) = \sum m(0,1,2)$

$\Rightarrow$ 

$\Rightarrow F(x,y) = \bar{x} + \bar{y}$

THREE-VARIABLES

$F(x,y,z) \rightarrow m_0 \ldots m_7$.