COL215L: Digital Logic & System Design

Lecture 6: Combinational Circuits



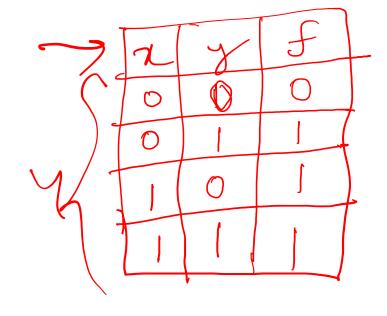
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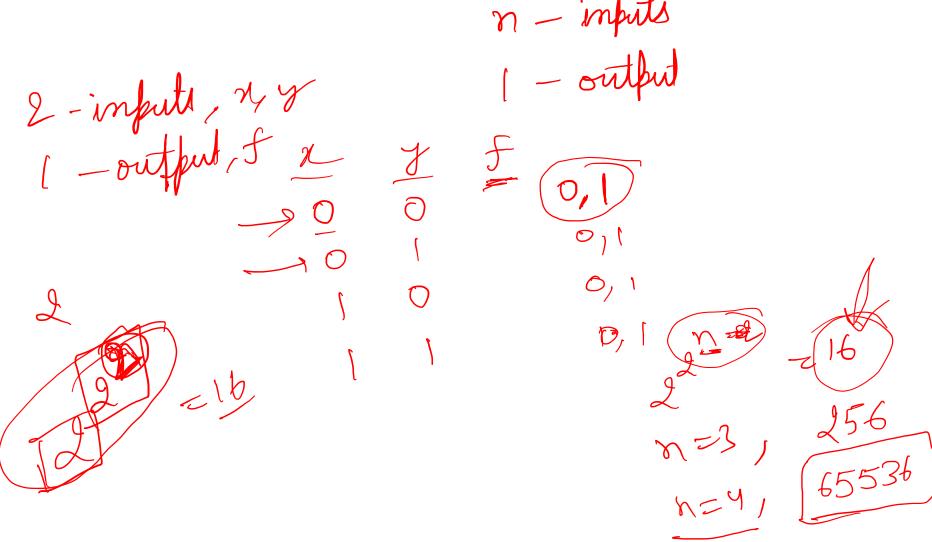
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Notation

Truth Table



Number of Distinct Functions

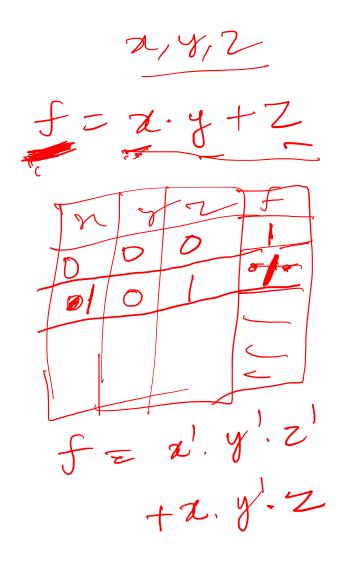


Universal Gate Set

SAND, OR, NOTY

SNANDY

NORY



DeMorgan's Laws

Duality

Replace AND with OR

$$(a+b+c')\cdot d = a\cdot d + b\cdot d + c'\cdot d$$

$$(a+b)\cdot (c'+d) = (a+d)\cdot (b+d)\cdot (c'+d)$$

Replace OR with AND