CASE STUDY ON
LOGIC GATES

SNS COLLEGE OF ENGINEERING

Kurumbapalayam (PO), Coimbatore – 641 107

An Autonomous Institution

Accredited by NAAC – UGC with 'A' Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

INTRODUCTION TO LOGIC GATES

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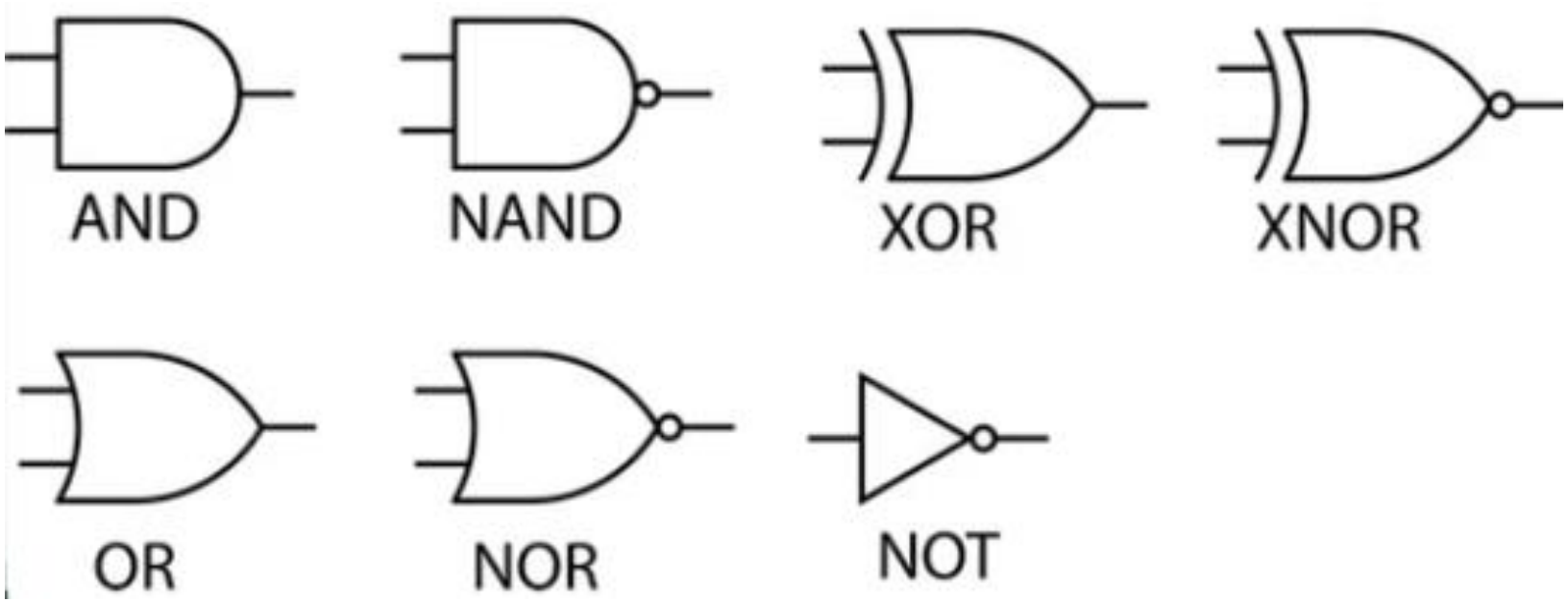
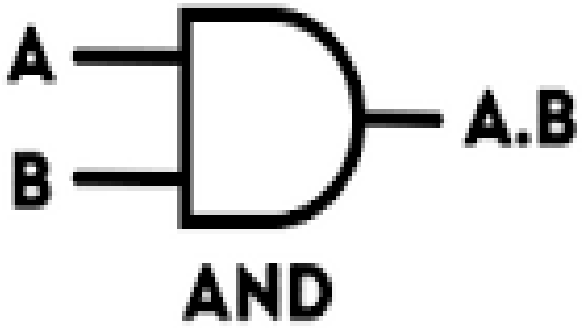
LOGIC GATES

A logic gate is **a device that acts as a building block for digital circuits**. They perform basic logical functions that are fundamental to digital circuits.

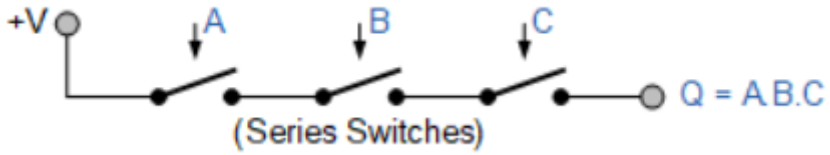


AND GATE

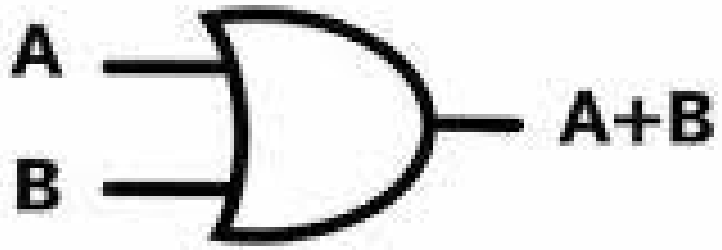


2 input AND Gate

A	B	A.B
0	0	0
0	1	0
1	0	0
1	1	1

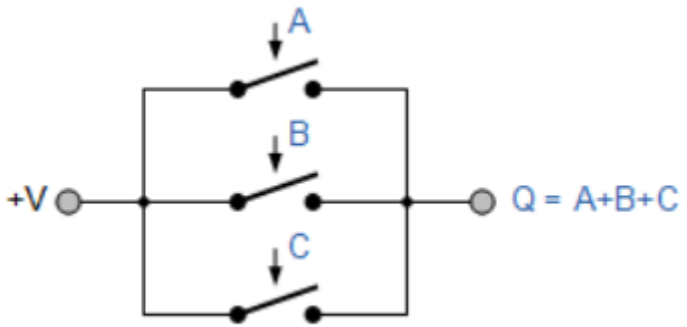


OR GATE



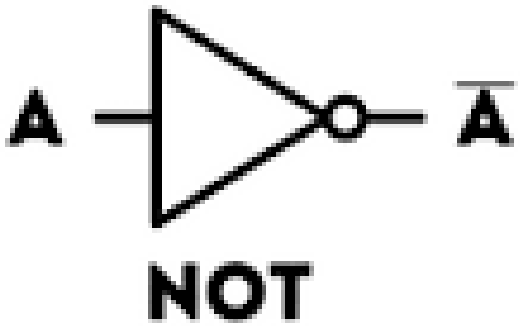
2 input OR gate

A	B	A+B
0	0	0
0	1	1
1	0	1
1	1	1



(Parallel Switches)

NOT GATE



NOT Gate

A	$\overline{A}$
0	1
1	0

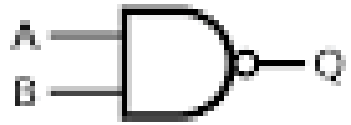
EXOR GATE

*eXclusive OR

2 input XOR gate

A	B	A⊕B
0	0	0
0	1	1
1	0	1
1	1	0

NAND GATE



Q = A NAND B

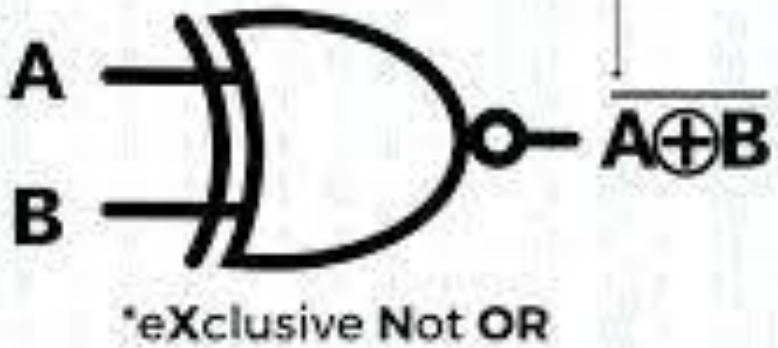
Truth Table

Input A	Input B	Output Q
0	0	1
0	1	1
1	0	1
1	1	0

NOR GATE

A	B	Out
0	0	1
0	1	0
1	0	0
1	1	0

XNOR GATE (or) EXNOR



2 input XNOR gate

A	B	$\overline{A \oplus B}$
0	0	1
0	1	0
1	0	0
1	1	1

Assessment

1. Guess what gate could be used to explain the working of a Gum ball machine


Thank
you