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LAB Manual 2

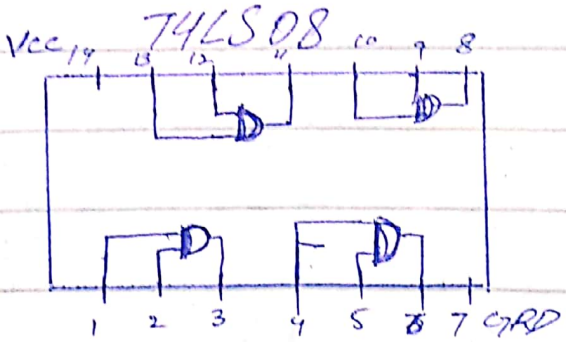
Objective:

In two days lab we are going to learn IC's and their structure and how they perform operations.

AND Gate

IC number: 74LS08

structure:



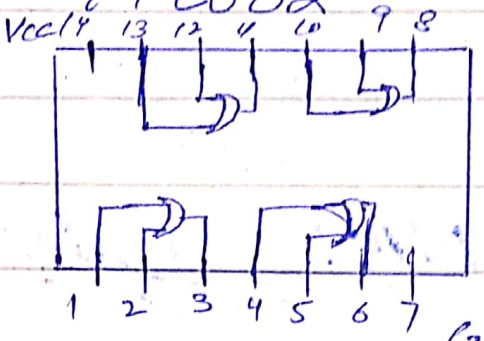
A	B	Y=A•B
0	0	0
0	1	0
1	0	0
1	1	1

It's working is simple if one of the input is zero (0?) then the output will be zero.

OR Gate

IC number: 74LS32

Structure:



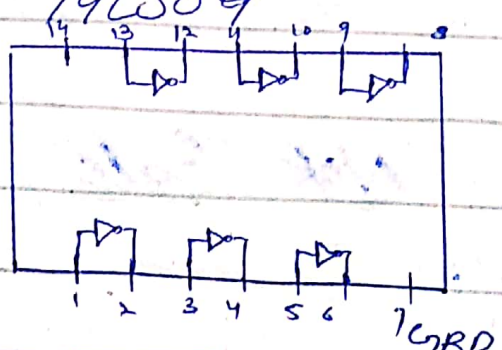
A	B	X=A+B
0	0	0
0	1	1
1	0	1
1	1	1

It's working is same as AND but if one of the input is true then output is true.

NOT Gate

IC Number 74LS04

Structure



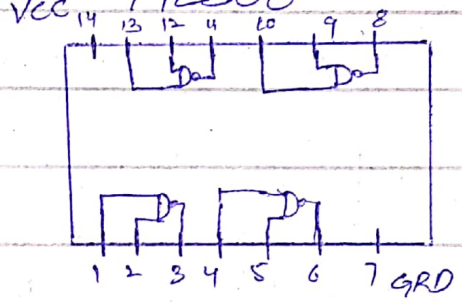
A	$\bar{A}$
0	1
1	0

In this IC 1st is input and 2nd is output. 14th and 7th are power and ground. It just convert the input, if input is true the output is false.

NAND Gate

IC number 74LS00

Structure



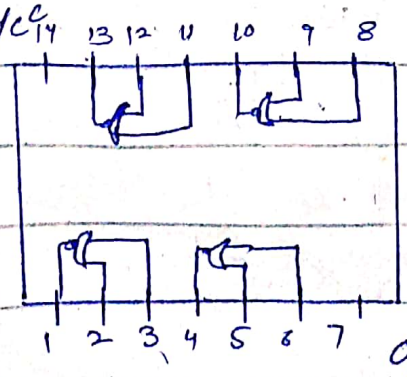
A	B	$\overline{A \cdot B}$
0	0	1
0	1	1
1	0	1
1	1	0

It is totally opposite to AND Gate.

NOR Gate

IC number: 74LS02

Structure:



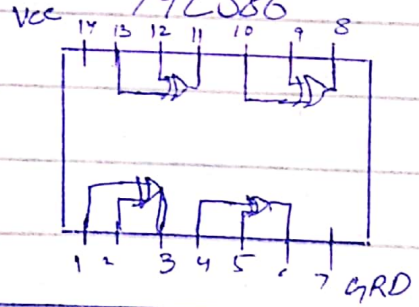
A	B	$A \overline{+B}$
0	0	01
0	1	0
1	0	0
1	1	0

It's opposite of OR Gate. Also the structure of IC is different Then other IC's.

XOR Gate

IC number: 74LS86

Structure:



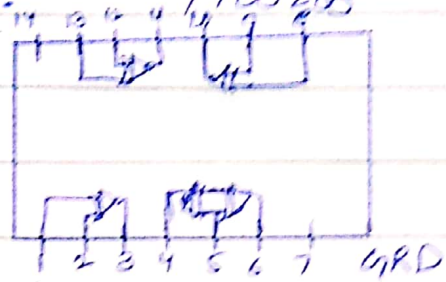
A	B	$\bar{A}$	$\bar{B}$	$\bar{A}B$	$A\bar{B}$	$\bar{A}B+A\bar{B}$
0	0	1	1	0	0	0
0	1	1	0	1	0	1
1	0	0	1	0	1	1
1	1	0	0	0	0	0

This IC give two output if the two inputs are same Also is special purpose IC.

XNOR Gate

IC number:: 74LS266

Structure::



This IC is different from All other. As there inputs and output are different as shown in graph.

A	B	$\bar{A}$	$\bar{B}$	$\bar{A} \cdot \bar{B}$	$A \cdot B$	Y
0	0	1	1	1	0	1
0	1	1	0	0	0	0
1	0	0	1	0	0	0
1	1	0	0	0	1	1

Instruments

The instruments we use are as following.

- wires
- Bread Board
- IC's
- Board

Conclud

Conclusion:

We made many circuits using the IC's and wires. We learn the basic concept of addition and how IC's perform tasks