

Basic Logical Operations ***(fascinating)***

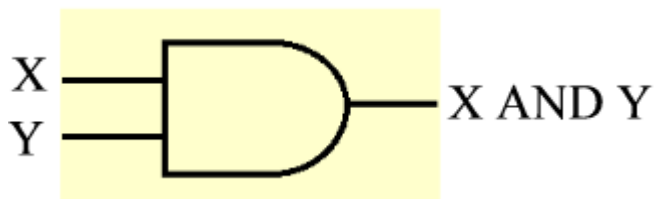
In this section you will learn what are the basic logical operations and how to evaluate different expressions

Logical AND

Truth table		
X	Y	X AND Y
False	False	False
False	True	False
True	False	False
True	True	True

Truth table		
X	Y	X AND Y
0	0	0
0	1	0
1	0	0
1	1	1

Logic gate

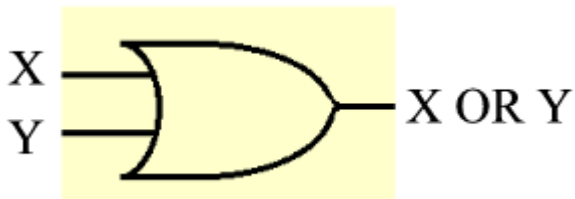


Logical OR

Truth table		
X	Y	X OR Y
False	False	False
False	True	True
True	False	True
True	True	True

Truth table		
X	Y	X OR Y
0	0	0
0	1	1
1	0	1
1	1	1

Logic gate

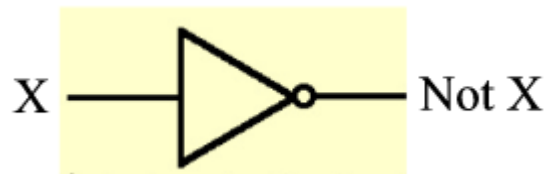


Logical NOT

Truth table	
X	Y
False	True
True	False

Truth table	
X	Y
0	1
1	0

Logic gate

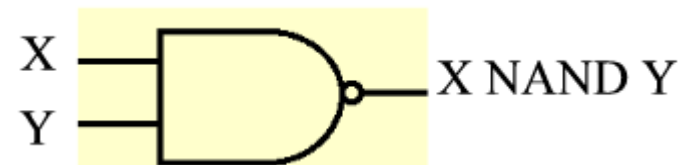


Logical NAND

Truth table			
X	Y	X AND Y	X NAND Y
False	False	False	True
False	True	False	True
True	False	False	True
True	True	True	False

Truth table			
X	Y	X AND Y	X NAND Y
0	0	0	1
0	1	0	1
1	0	0	1
1	1	1	0

Logic gate

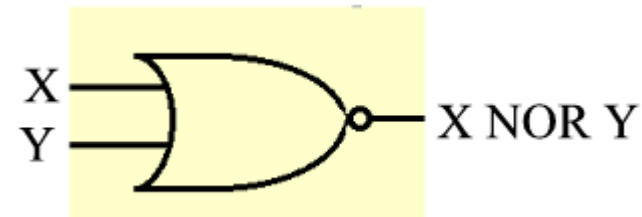


Logical NOR

Truth table			
X	Y	X OR Y	X NOR Y
False	False	False	True
False	True	True	False
True	False	True	False
True	True	True	False

Truth table			
X	Y	X OR Y	X NOR Y
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0

Logic gate

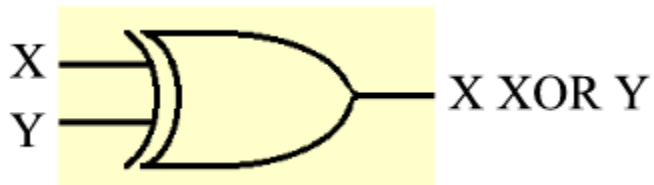


Logical Exclusive OR (XOR)

Truth table		
X	Y	X XOR Y
False	False	False
False	True	True
True	False	True
True	True	False

Truth table		
X	Y	X XOR Y
0	0	0
0	1	1
1	0	1
0	0	0

Logic gate



Why Bother With Logic (Gates And Computers)?

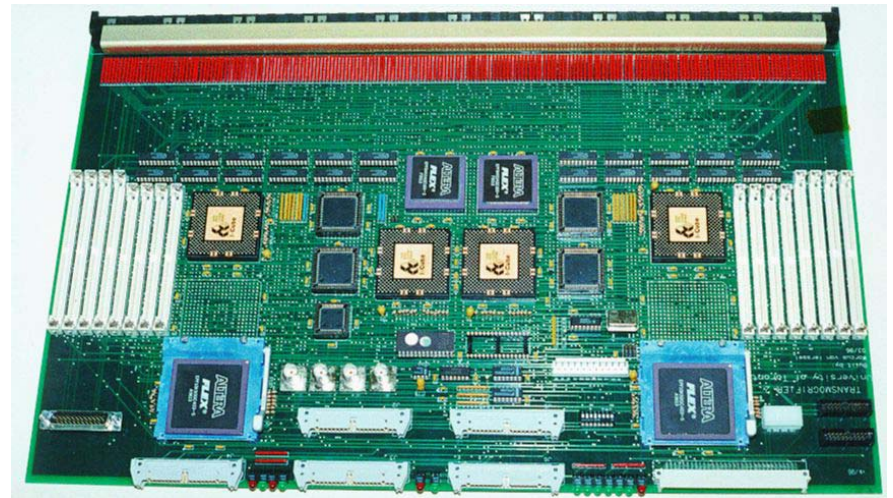
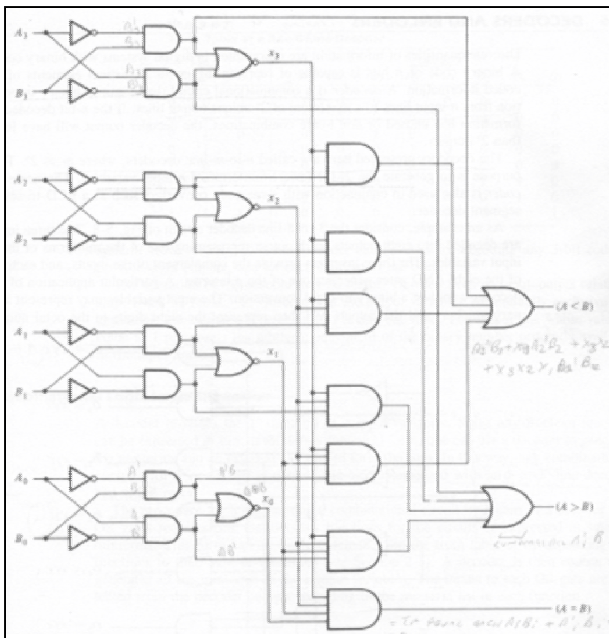


Bill Gates, Chairman and Chief Software Architect of Microsoft™

Reasons For Learning About Logic

Hardware perspective

The computer is built using logic circuits



User perspective

Logic is used everyday

Summary

The different types of logical operations that a computer may perform

- AND
- OR
- NOT
- NAND
- NOR
- XOR

How logic gates form an important part of computers