Converting

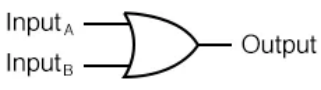
From Hexadecimal to decimal	From Binary to Hexadecimal
$BF=B*16^1+F*16^0=11*16^1+15*16^0=171+15=191$	1) Find the biggest power of 16 that fits in - number of positions
	3501- 16, 256, ~~4096~~
	2) Find the biggest multiplier
	x*256, that fits? x=13=D
	3501-13*256=173
	Y*16<173, 10*16=A*16
	173-160=13, 13=D
	3501(2)=DAD(16)

From Binary to decimal	From Decimal to binary
Just multiplying 1 or 0 by 2 in the power of position	1) find the biggest power of 2 that fits - number of positions
$10100=1*2^4+1*2^2=20$	$63=2^5$
	2) Find the biggest multiplier
	$63-32=31, 2^4$
	$31-16=15, 2^3$
	$15-8=7, 2^2$
	7-4=3, 2^1
	3-2=1, 2^0
	63(10)=111111(2)

Hexadecimal to binary	Decimal to hexadecimal
1)Each number should represent the four digits in the binary number	191:16=11.R => R*16=.9375+16=15
BF => 8 digits	if the number before is less than 16, then it is the first digit, if not, then keep counting
B=11, 11=1011	11 => B
F=15, 15=1111	BF, reading backwards
BF(16)=10111111(2)	

Or gate

2 - input OR gate



A	B	Output
0	0	0
0	1	1
1	0	1
1	1	1

X() gates

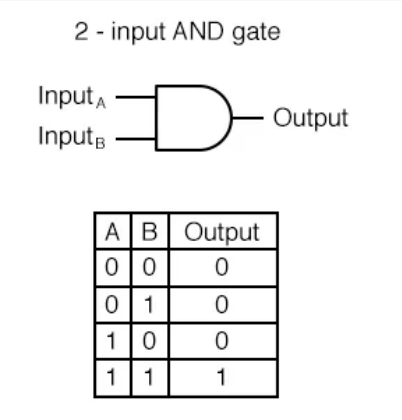
File Processing

These are XAND and XOR gates, they are exclusive

So for XAND only if both inputs are identical it will give a 1

For XOR only if they are both different, it will give a 1

And gate



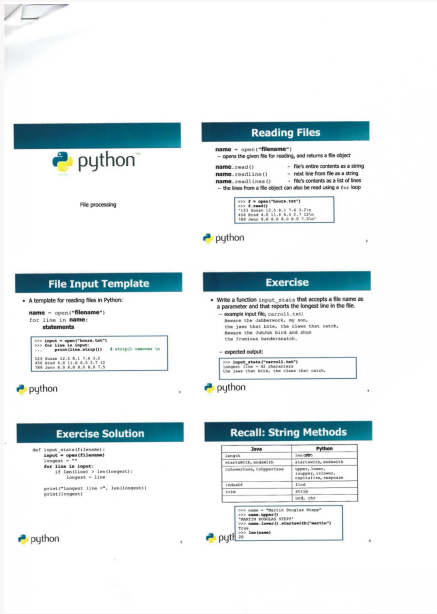
A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1

N() gates

The gates with N, such as NOR, NAND, XNOR, NOR, XNAND, are just gates with a NOT after them

Not gate

A	Q
0	1
1	0



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