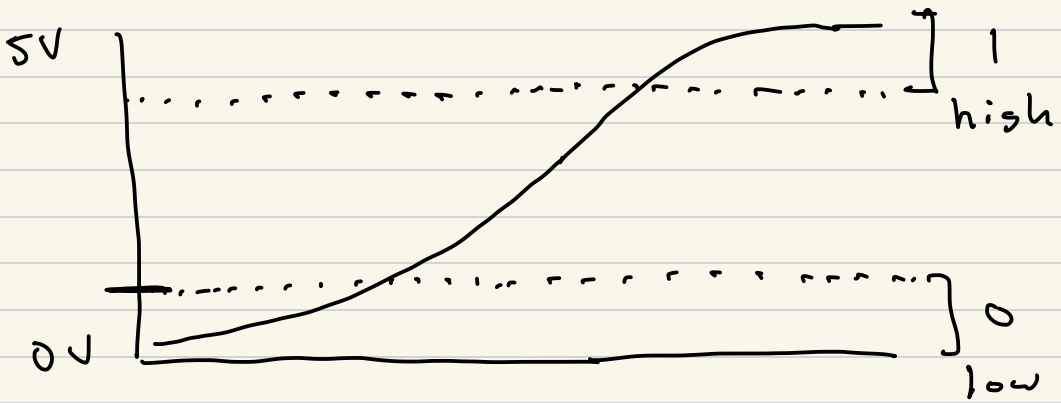
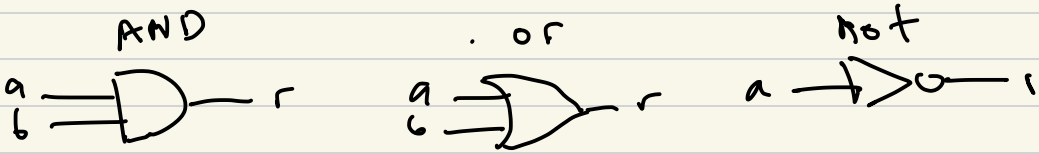
CS 315-01 Lab Intro to Digital Design

Digital Design

Analog → Digital
circuits circuits



wires & devices → gates

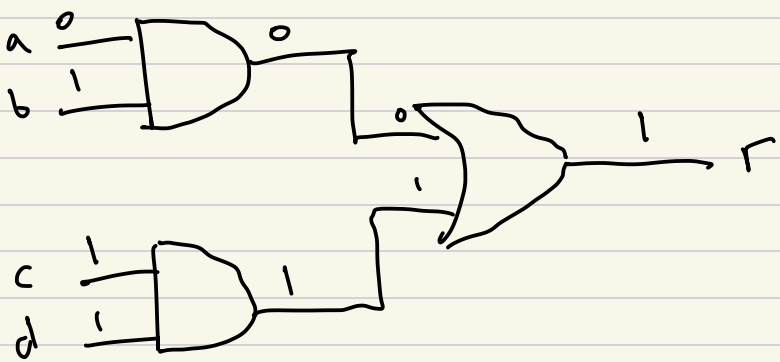


	AND	OR	NOT
C code	r = a & b	r = a | b	r = ~a
Boolean Alg	r = a · b	r = a + b	r = $\bar{a}$
Logic	r = a ∧ b	r = a ∨ b	r = ¬a

a	b	r
0	0	0
0	1	0
1	0	0
1	1	1

a	b	r
0	0	0
0	1	1
1	0	1
1	1	1

a	r
0	1
1	0



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

Abstraction

Goal : build an 8-bit adder