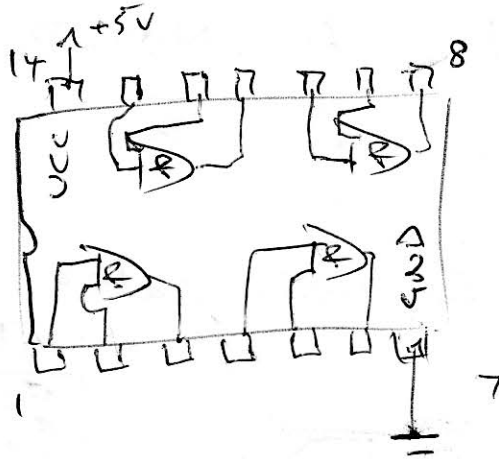


9 OCT 10.  
2015 WK 2

Jed Gibbs

## INTRO to DIGITAL ELECTRONICS



$a = 1$

$b = 0$

if  $a$  &  $b$  then  $c = 1$

else  $c = 0$

if RAM not an issue, if 'race-track' memory specifying them in the order  $b$  then  $a$  would take 10 x the run cycles.

Truth tables - a description of logic

This shows "AND"

inputs		output
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

OR uses +  $C = A + B$   $C = A \text{ OR } B$

AND uses  $\bullet$   $C = A \bullet B$   $C = A \text{ AND } B$

NOT useful,  $A = \text{NOT } B$

$A = \overline{B}$  ('hide' B)

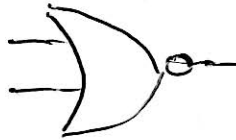
See slides for logic gates and NOTs

NAND



A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

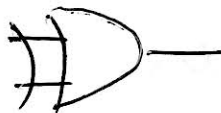
NOR



A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

EXCLUSIVE OR

EXOR



A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

see slide for logic

9 OCT 10am-11am  
2015

Jed Gibbs

current similar to fluid in a pipe  
current remains a constant as the output -  
it is conserved

voltages are additive  $V^1 + V^2$

resistors  or   
older format

$$V = ir$$

### Beaglebone ADC

file system represents them as files

`cat /sys/devices/platform/omap/tsc/ain1`

has 7 ADC inputs