

Lecture 1

Monday, August 31, 2015 10:00 AM

1 2 4 8 16 32 64 128 256 512 1024 2048 4096 8192 16384 32768 65536

Know your powers of 2 from 1 to 16

REALLY KNOW THEM BY HEART

0 and 1

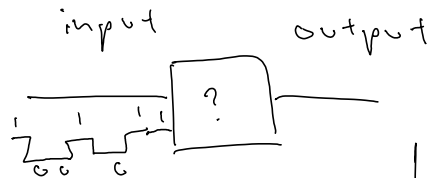
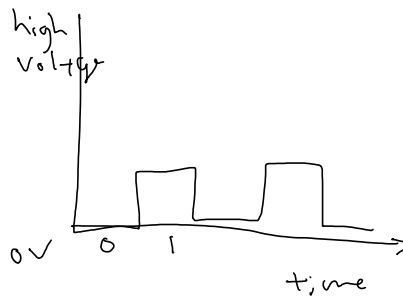
1024 ways to put 0 and 1 together in configurations

There is electricity current, but doesn't have to be, Low/high pressure hydraulics, mechanical, etc.

Not about building a cpu, and the physics or CE We will only build things on paper as a CS major

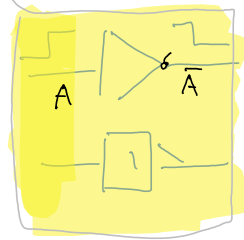
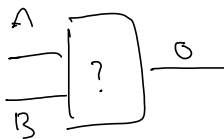
WHAT DO YOU WANT TO DO WITH YOUR 0s and 1s

- Circuits
- 4 possible outcomes
 - Only A is interesting to us
 - Not Gate
- Gates, can't be decomposed further, atomic
- Not Gate in series, does nothing, double negative



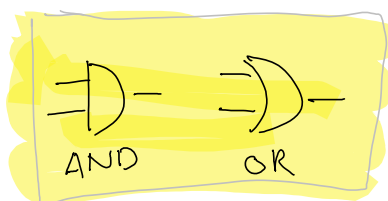
A	1 1 1 1 1 1 1 1
B	1 1 1 1 1 1 1 1
C	0 0 0 0 0 0 0 0
D	1 1 1 1 1 1 1 1

opposite
4 outputs



truth Table

A	B	OR	AND
0	0	0	0
0	1	1	0
1	0	1	0
1	1	1	1



3 Kinds of Gates necessary for all circuits

- Not Gate \bar{A}
- And Gate $A \cdot B$ ($A \wedge B$)
- Or Gate $A + B$ ($A \vee B$)

A	B	11 diff outputs
0	0	0 0
0	1	0 0
1	0	0 0
1	1	0 1

AND OR

Seatbelt Alert



4 Input And Gate

- Technically a circuit, because it's composed of four atomic gates
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