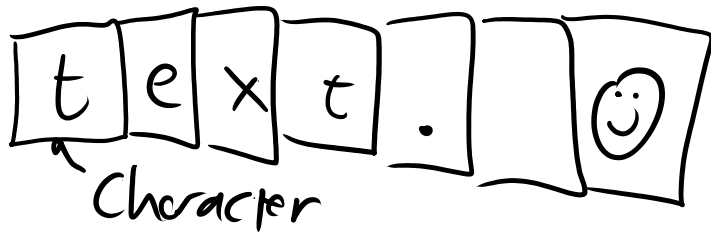




Finish unicode /text /data

~.~

Machines - 0 & 1



Unicode

number $\longleftrightarrow$ character

00000000 - 01111111

ASCII

0...7F = 128 < 256

byte = 8 bits = 2 hex digits

1 char / Byte

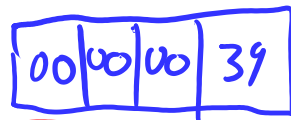
U + 0000

U + 10FFFF

100000

$1 \times 10^5 \sim 1 \text{ million}$

UTF-32



$\hookrightarrow$ not backward compatible w/ ASCII

UTF-8: ASCII $\rightarrow$ unchanged (1B/char)
bytes - multi-byte

Data: from concept to bits

break into pieces

numbers {
- math, quantity
- list, enumeration
- bit patterns

data

01011111
5 F

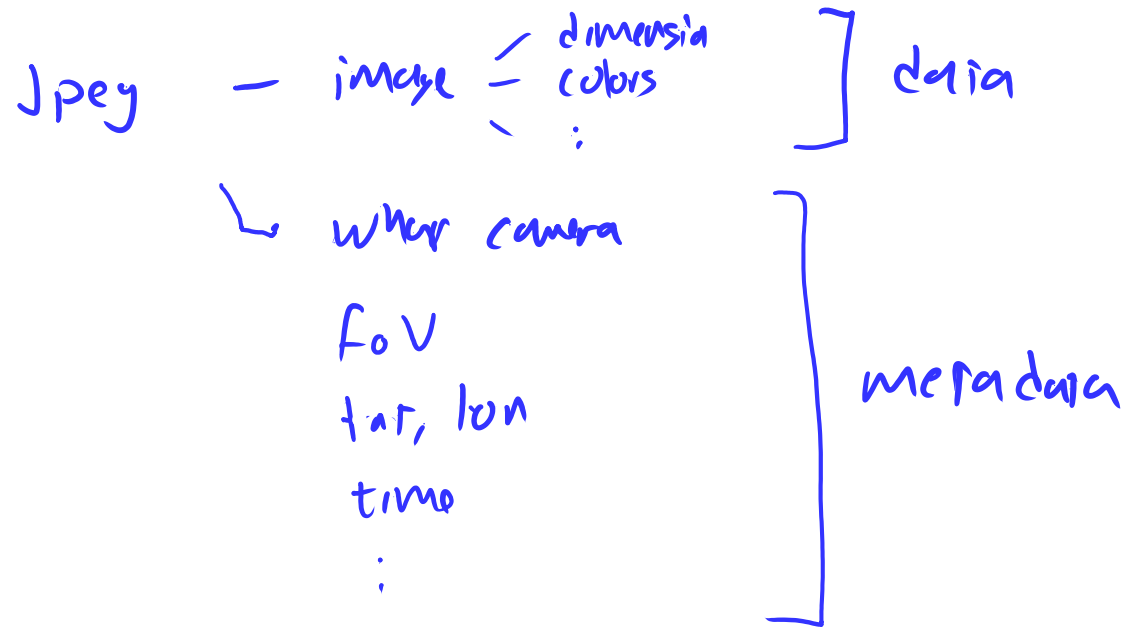
assigns meaning

type

ASCII —

integer 95

float ...
⋮



file .jpg
pdf

New Topic

Machines using bits

0 or 1

- 2 distinguishable things

no
voltage

voltage

N pole

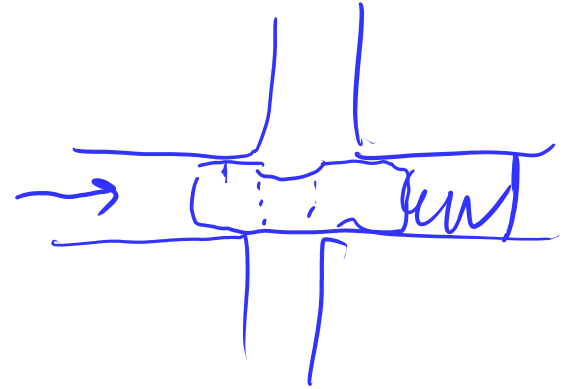
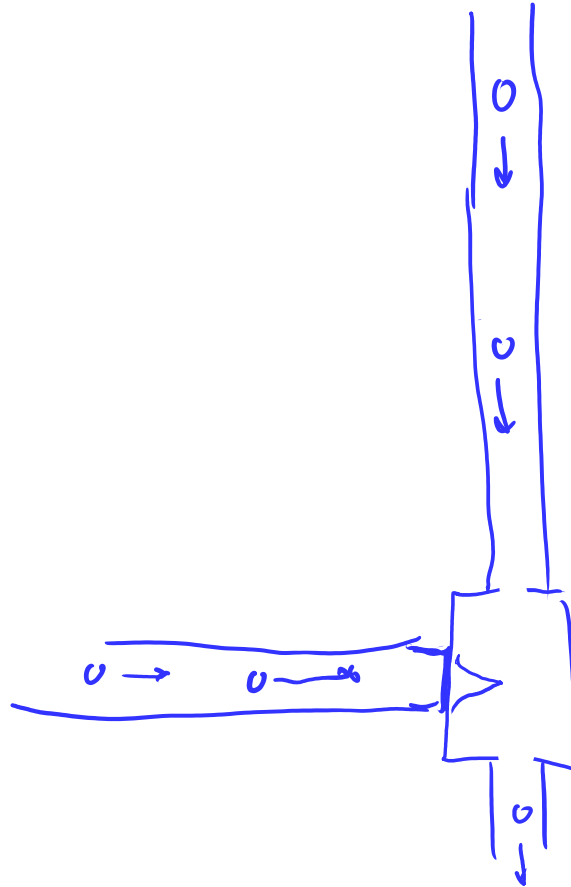
S pole

Shiny

rough

⋮

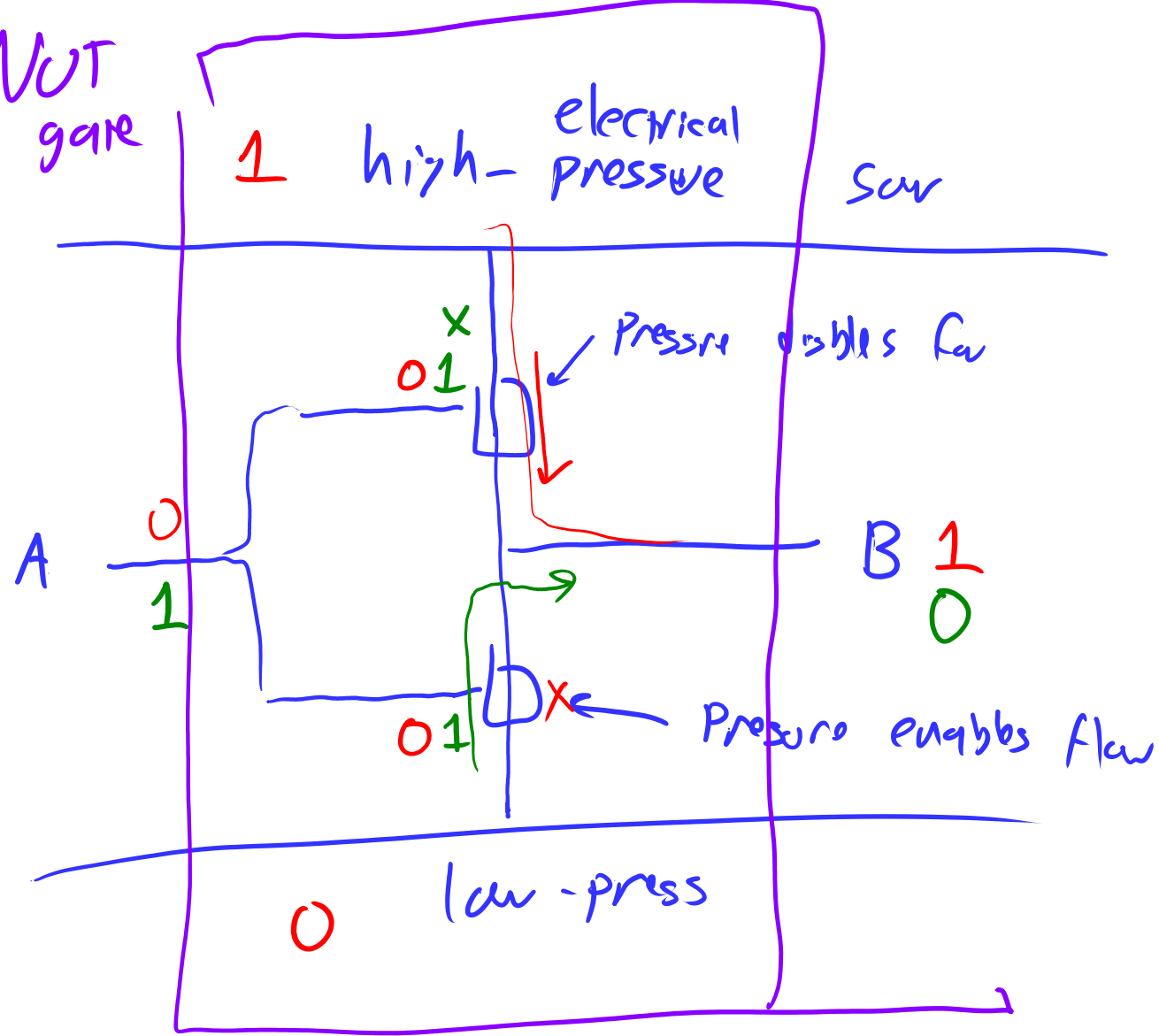
transistor



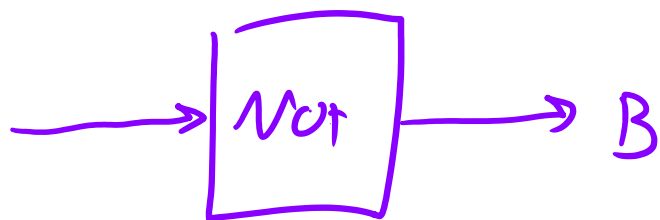
Abstraction

NOT
gate

A	B
0	1
1	0



A	B
0	1
1	0



$$A \vee B = \boxed{\text{OR}} - C$$

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

$$A \oplus B = \boxed{\text{XOR}} - C$$

exclusive

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

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

0 = false
 1 = true
 Truth
 table

