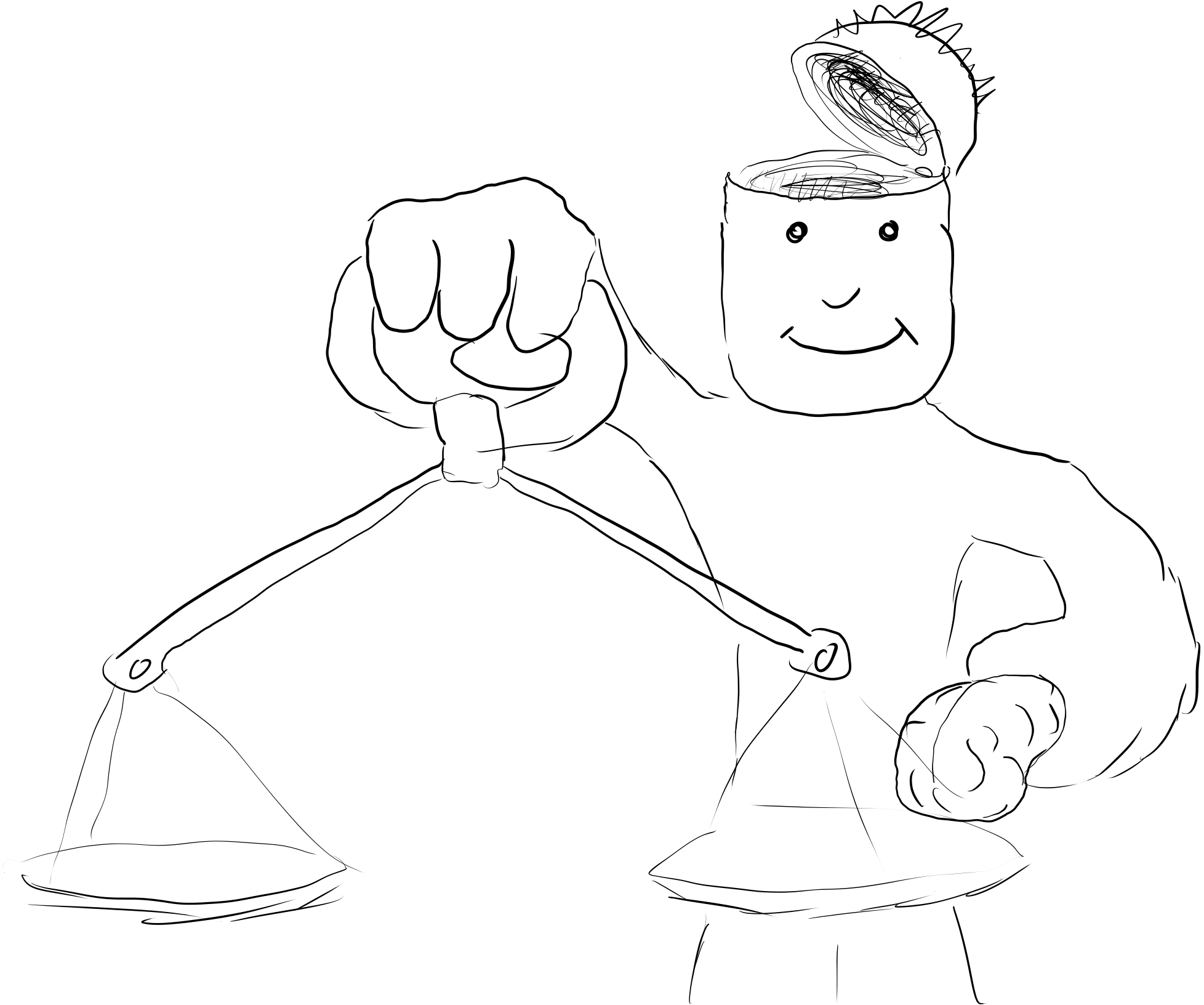


0b11100011001 0 << 3

>>

11100011001 0000

11100011001 0

+128 unsigned >>3

Char 1000 0000

-128 signed >>3

00010000 = 16 = $\frac{128}{2^3}$

1111 0000 = -16 = $\frac{-128}{2^3}$

1 negative

1 ---

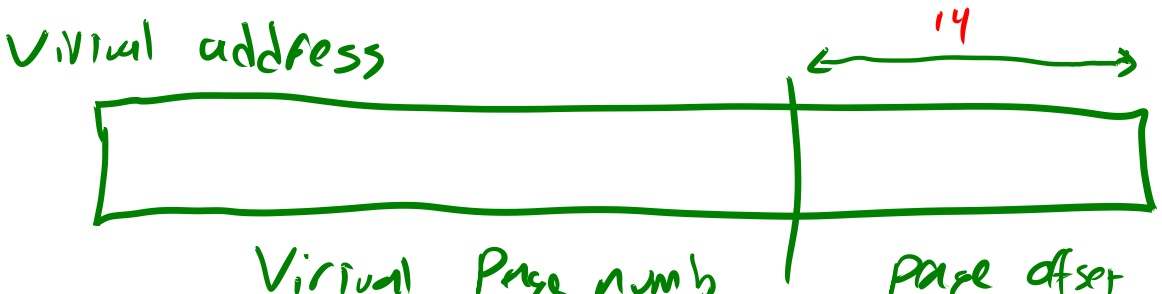
1111 0000

+ 0001 0000

0000 0000

(c >> 3) & 0b11111

(c & 0b11111000) >> 3



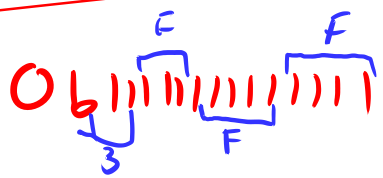
16 kB

$\log_2(16\text{ kB})$ bits of P.O.

$64 - 14 = 50$ $\quad \frac{50}{4} = 12.5$ $\quad$ 14

Page num

$(a >> 14) \,\&\, 0x3FFFFFFFFFFFFF$



Page offset

$a \,\&\, 0x3FFF$

1 ——— 14 zeros

$(1 << 14) - 1$

CPU

numbers are numbers

0x 12 34 56 78

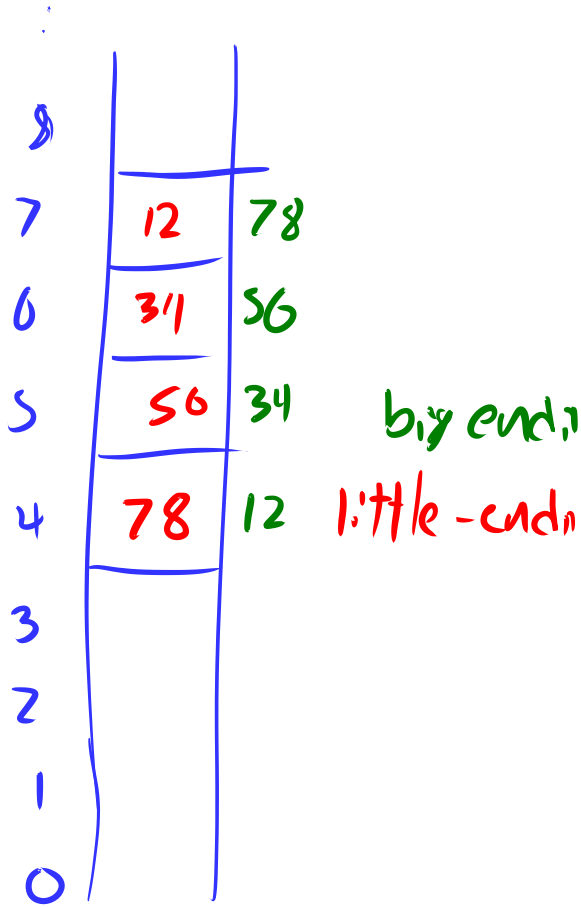
↓↑

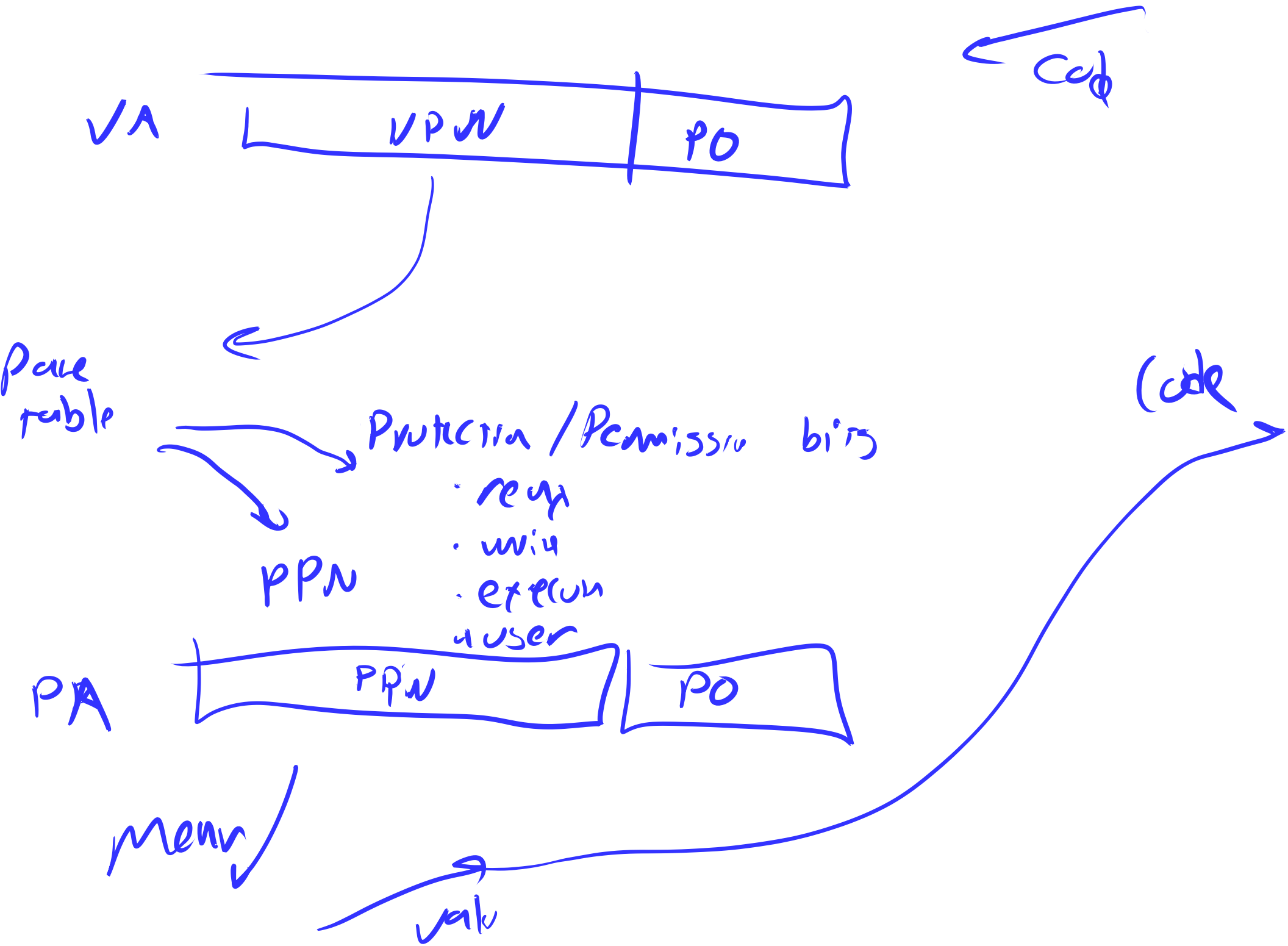
0x 78 56 34 12

ner

Mem

num is bytes




code
VA
VPN
PO
page table
Protection / Permissio bits
· read
· write
· execu
· user
PPN
code
PA
PPN
PO
mem
walk

Segment - kernel abstraction

Contiguous address range

Stack

heap

Globals
- read only
  - data
  - code
- read/write