





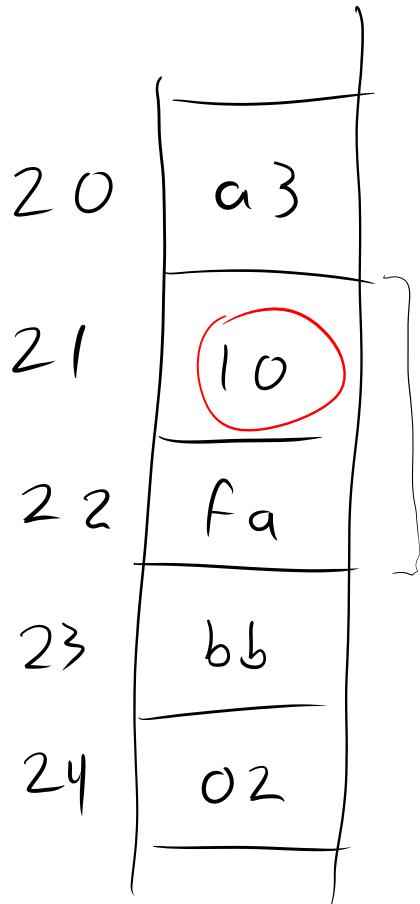
Memory

array of ^{octet} bytes
8-bit

characters

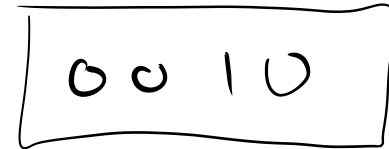
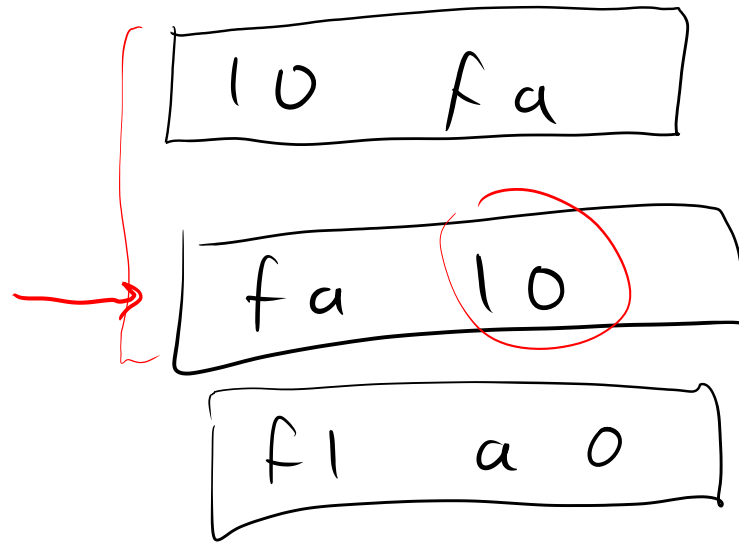
Strings

0x12345678



78
56
34
12

read 21 → 10

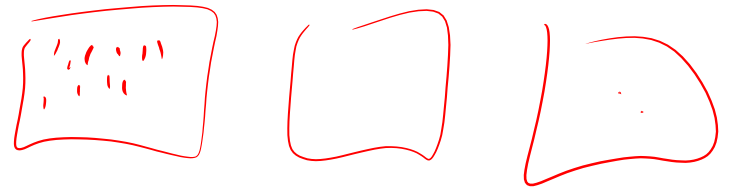


digits

1893

MCCM XCIII

1893



Arabic
place values

(1)

big-endian — most sign

little-endian — biggest first

least
smallest

← 1893 ←

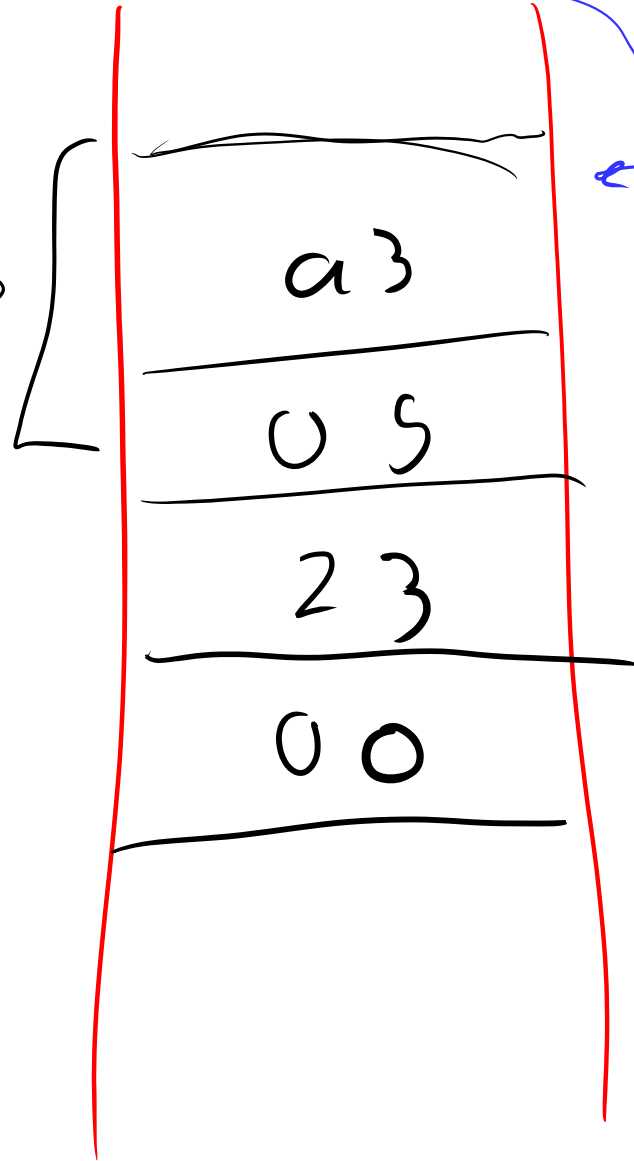
+ 2019

[5 a 3 , 2 3]

16-bit #

elements

50
in order



little end list

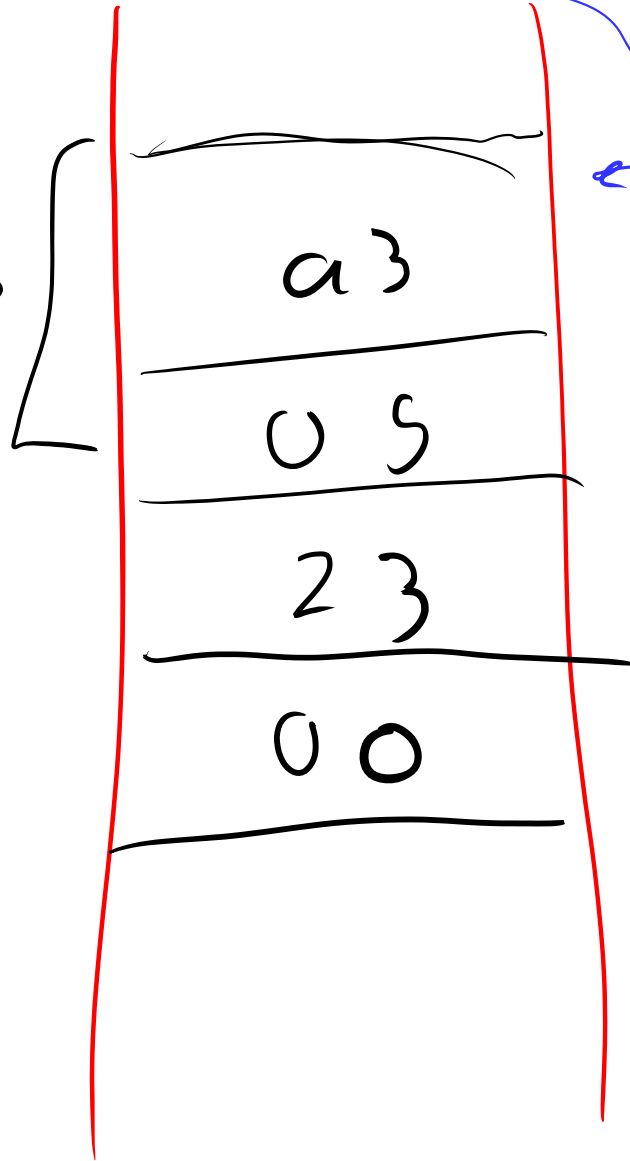
[5 a 3 , 2 3]

16-bit #

elements

50

in order



little end list

addressing modes

where did the operand come from

$$r_0 = r_1 \quad \text{register}$$

$$r_0 = \text{imm} \quad \text{immediate}$$

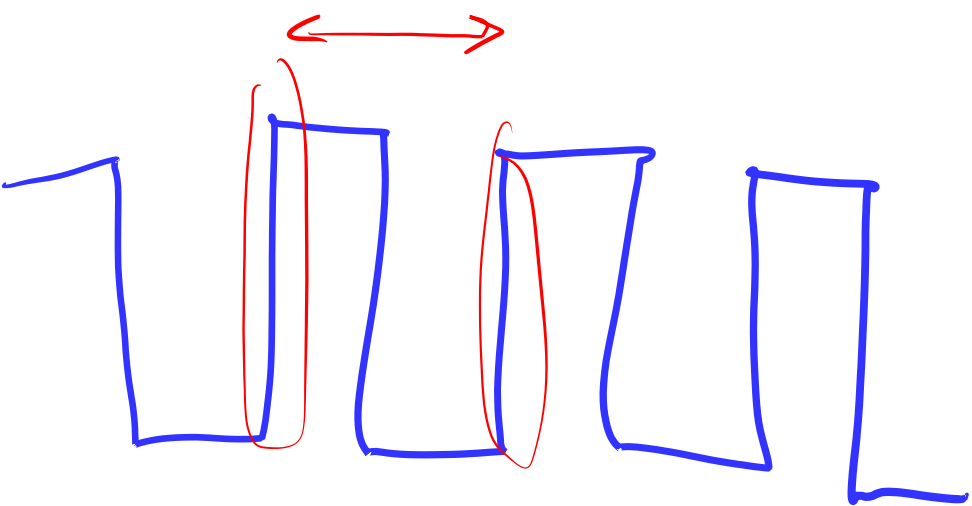
$$r_0 = \text{mem}[r_1]$$

$$r_0 = \text{mem}[\text{imm}]$$

$$r_0 = \text{mem}[r_1 + \text{imm}]$$

$$r_0 = \text{mem}[r_1 + r_2 \times 3 + \text{imm}]$$

$\frac{1}{798,000,000}$ sec clock

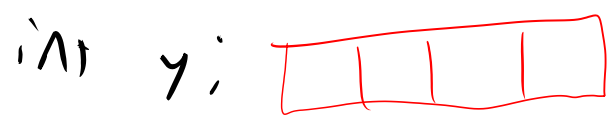
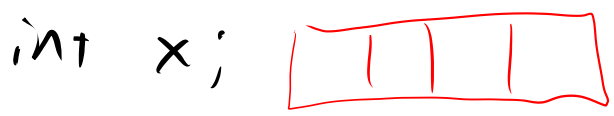


$$\text{Hz} = \frac{1}{\text{s}}$$

million
 $\overline{\text{M}}$ Hz 798

6 Hz 2.7

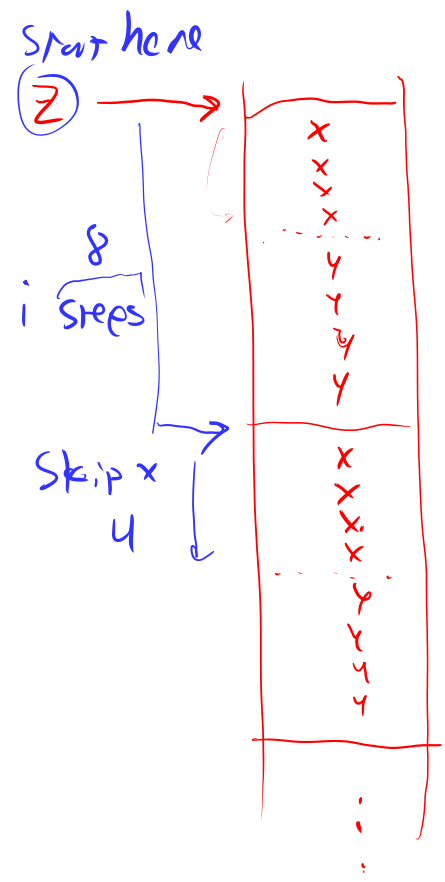
class Point {



}

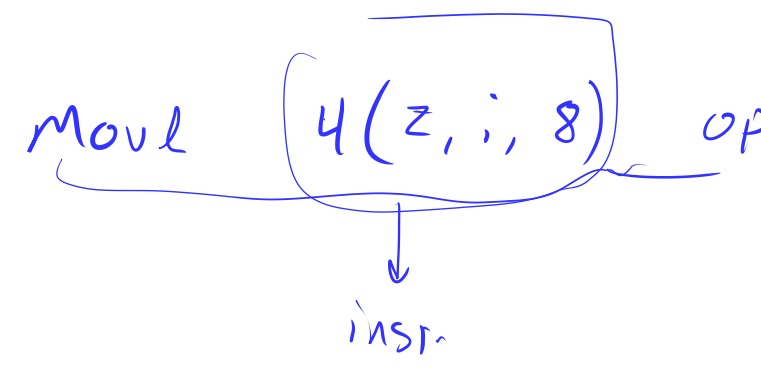
8 bytes
Point[] z

$$z[i].y = 3$$



$$\text{Mem} \left[\underbrace{z}_{\text{reg}} + \underbrace{i \times 8}_{\text{reg}} + \underbrace{4}_{\text{imm}} \right] \stackrel{\text{shift } \ll 0, 1, 2, 3}{=} 3$$

code part



Sh, 'b b e l e r h