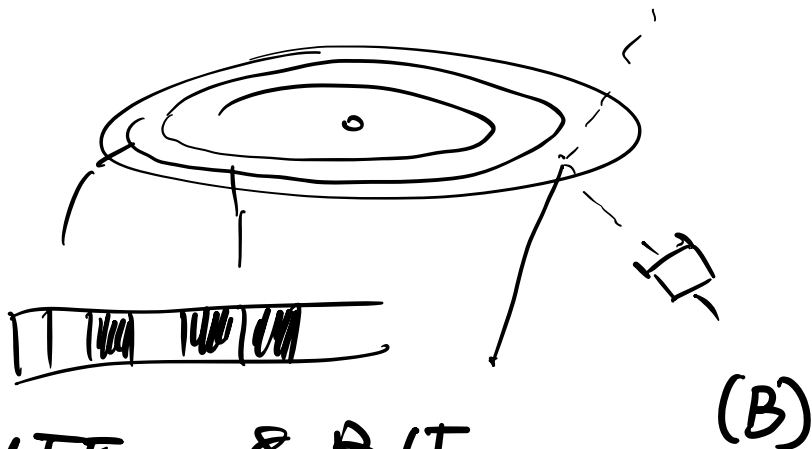
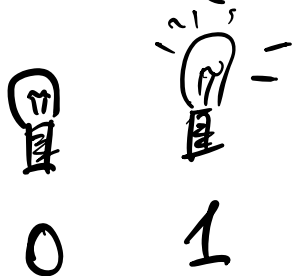


MACCHINA DI VON NEUMANN

MEMORIA

- BIT (= Binary digit) (b)



- 1 BYTE = 8 BIT

INDIRIZZO

0	0	0	1	0	1	0	1	← celle
1	0	1	0	0	1	0	1	
2								
3								
999								

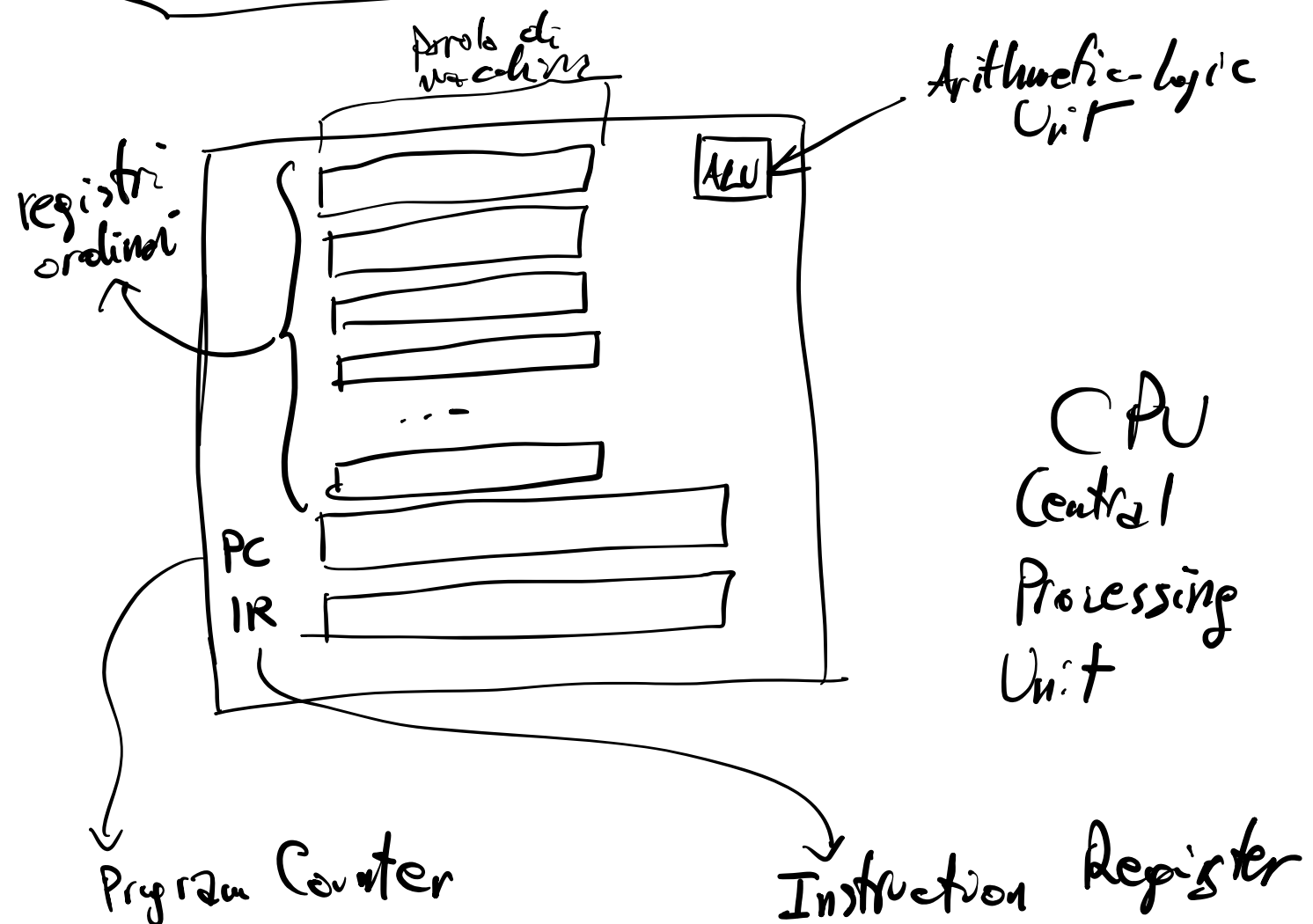
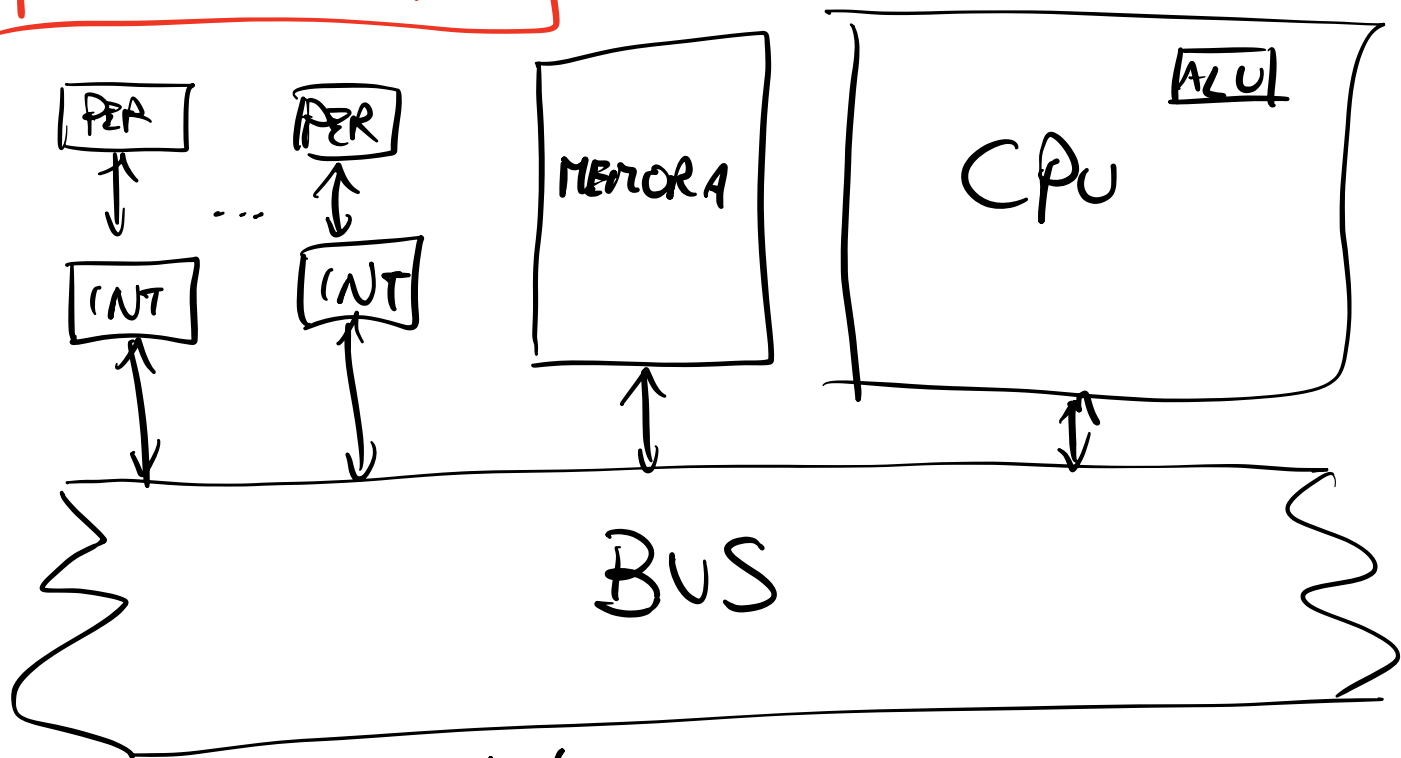
1 KiB $= 2^{10} \text{ B} = 1024 \text{ B}$
 1 MiB $= 2^{20} \text{ B} = 1\,048\,576 \text{ B}$
 1 GiB $= 2^{30} \text{ B} = 1\,073\,741\,824 \text{ B}$
 1 TiB $= 2^{40} \text{ B} = 1\,099\,511\,627\,776 \text{ B}$

1 BYTE, QUANTI VALORI POSSIBILI?

0	}	0000 0000	} $2^8 = 256$
1		0000 0001	
:		:	
:		:	
255		1111 1111	

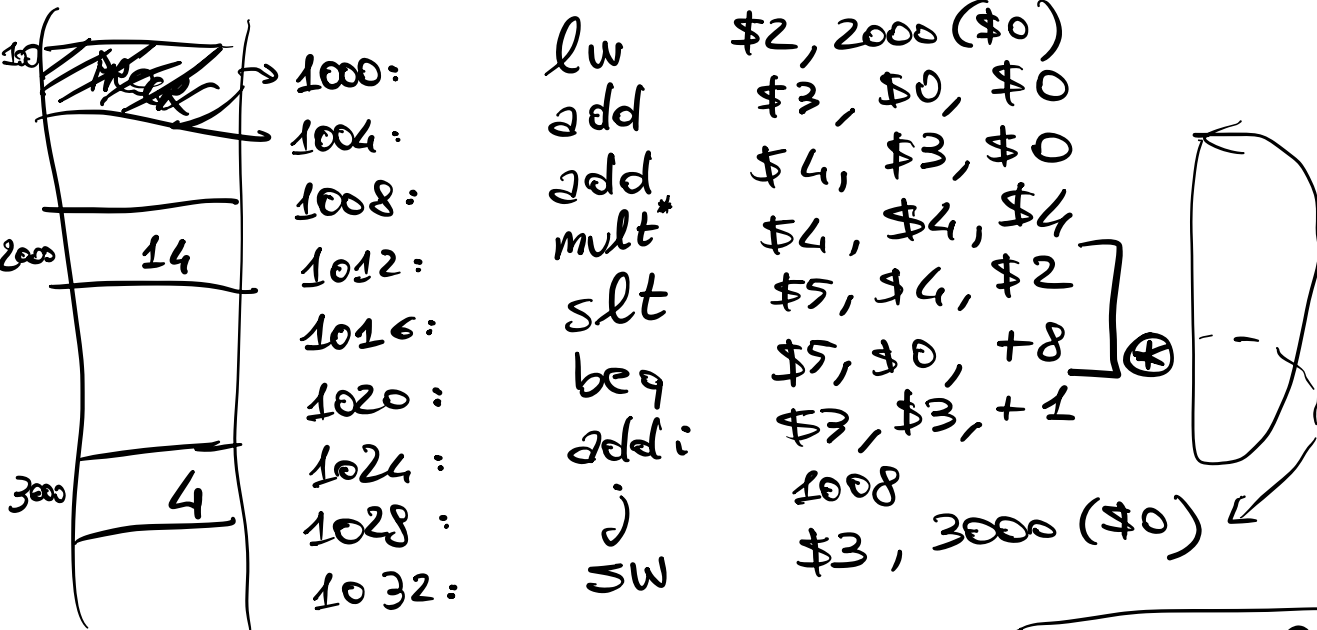
PAROLA di MEMORIA =
 1. più byte consecutivi
 32 bit $\rightarrow$ 4 byte
 64 bit $\rightarrow$ 8 byte

MACCHINA DI VON NEUMANN



PROGRAMMA

ASSEMBLY MIPS 32



PC

IR

fetch
decode
execute

\$0	0
\$1	
\$2	14
\$3	4
\$4	16
\$5	1

Reg.
ordine

⊛ if \$4 > \$2
; 1032

lw \$i, x(\$0)

LOAD WORD
\$i ← contenuto delle parole
di memoria di
indirizzo x

add \$i, \$j, \$k

\$i ← \$j + \$k

mult \$i, \$j, \$k

\$i ← \$j * \$k

slt

$\$i, \$j, \$k$
SET IF LESS THEN

$\$i \leftarrow \$j < \$k ?$

beq

$\$i, \$j, \pm N$
BRANCH IF EQUAL
if $\$i = \j , $\pm N$ sul PC

addi

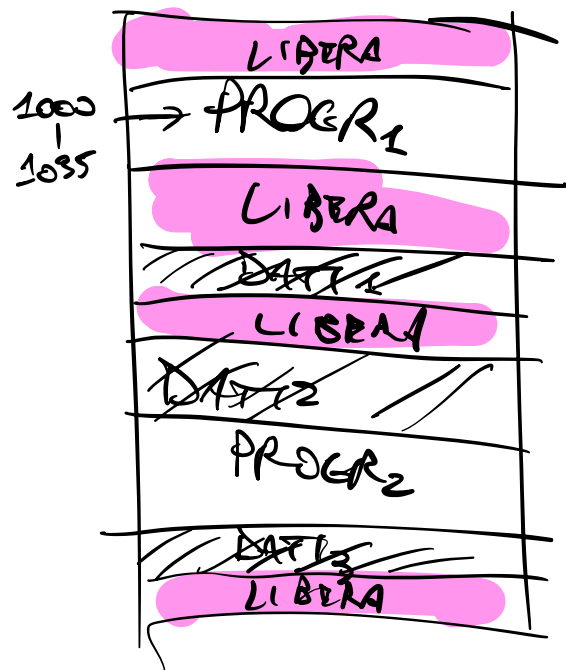
$\$i, \j, VAL
ADD IMMEDIATE
 $\$i \leftarrow \$j + VAL$

j

X
JUMP
 $PC \leftarrow X$

sw

$\$i, x (\$0)$
SCRIVI ALL'INDIRIZZO
IL CONTENUTO DI $\$i$



MEMORIA
CENTRALE