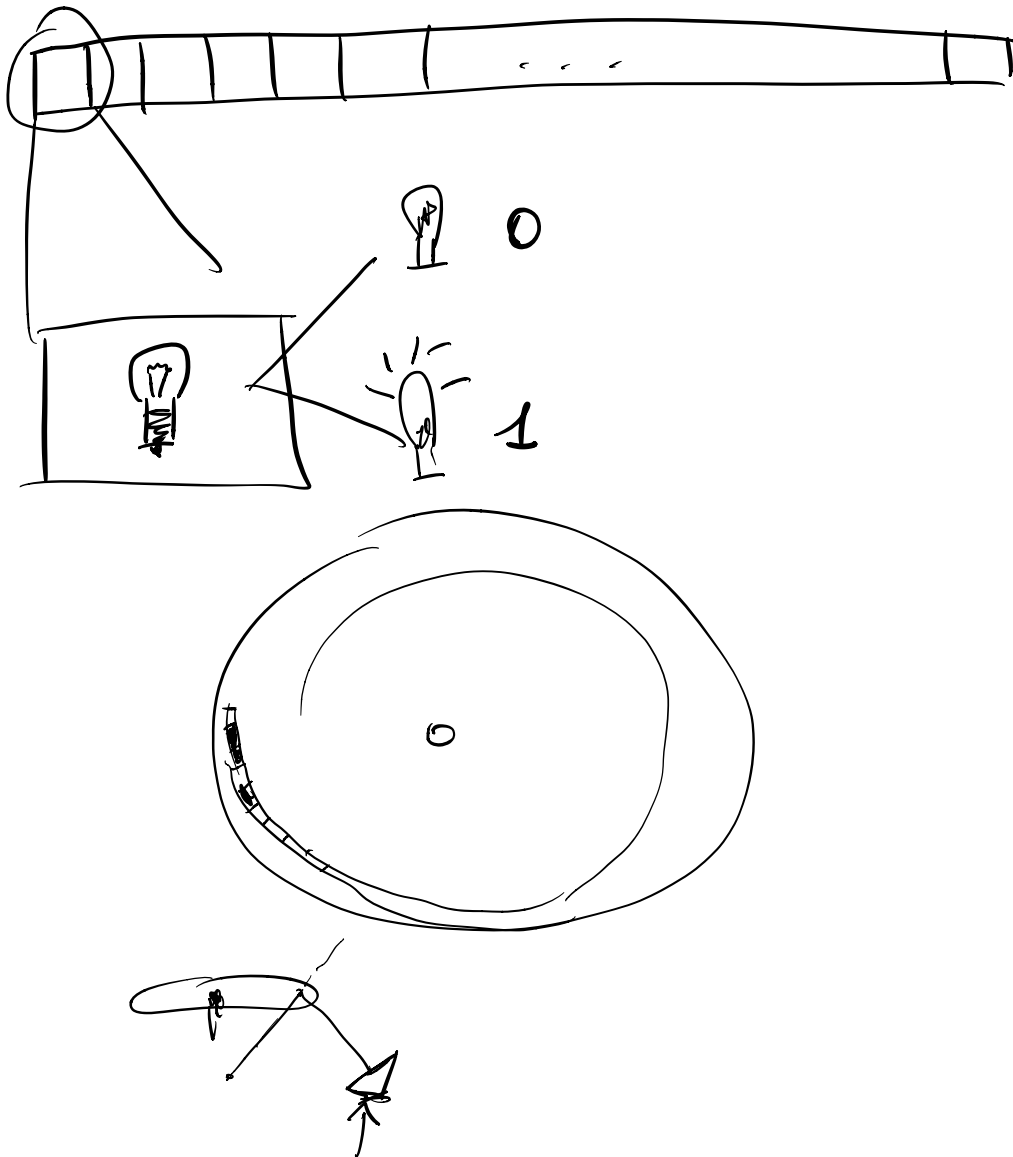


MACCHINA DI VON NEUMANN

MEMORIA DIGITALE

- Sequenza di bit (b)





INDIRIZZO CELLE

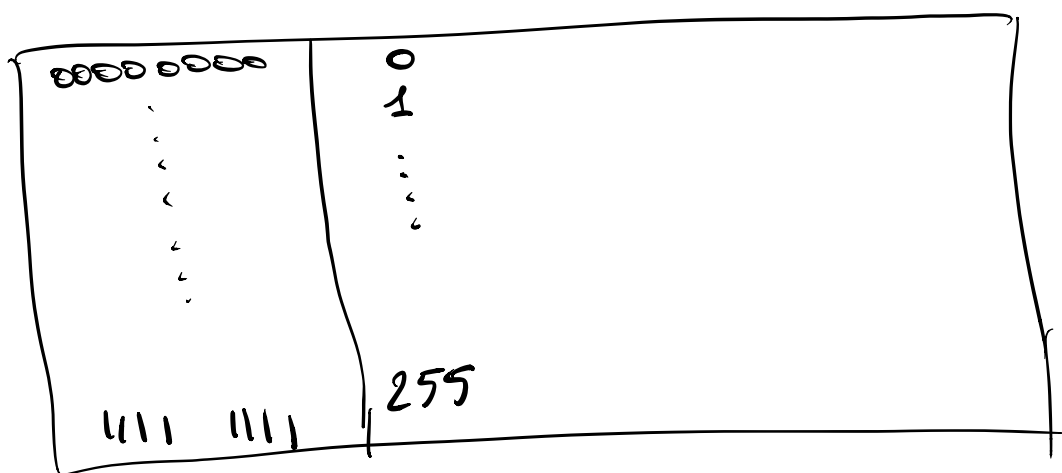
0	00010110
1	11000000
2	00000000
99	

1 BYTE = 8 BIT

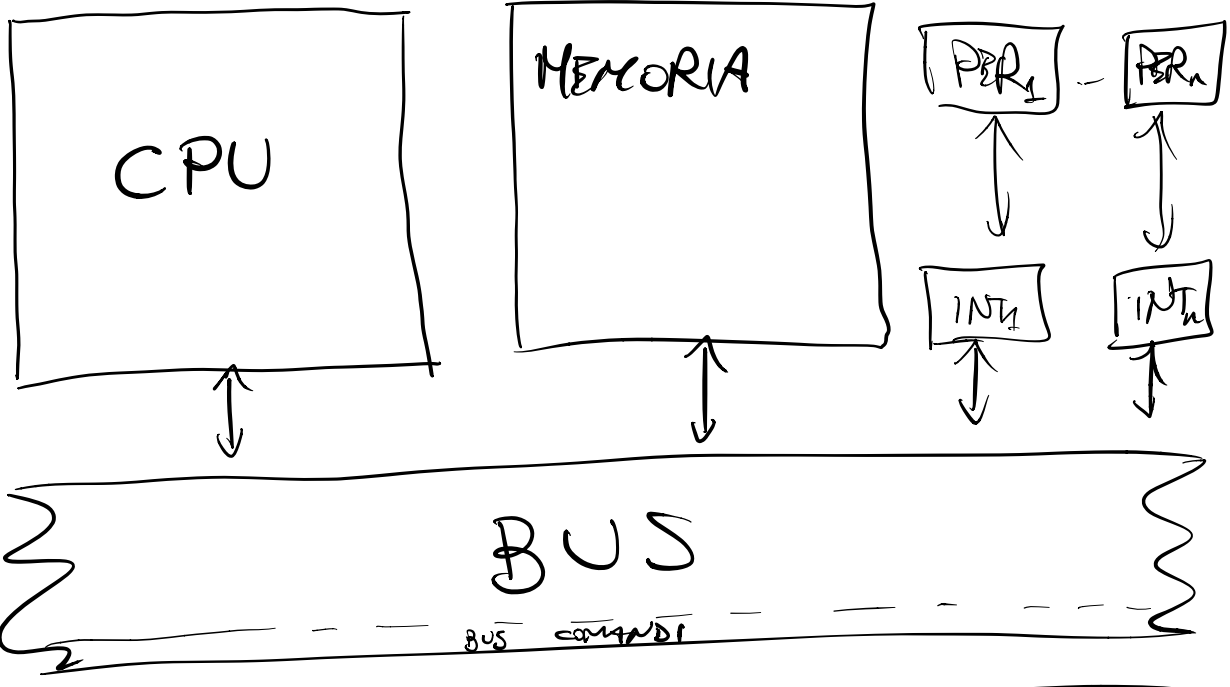
800 bit
 $\Downarrow$
 100 byte

1 bit $\Rightarrow$ 2 valori possibili (0, 1)

1 byte $\Rightarrow 2^8 = 256$



MACCHINA DI VON NEUMANN



PROGRAMMI
IN ESECUZIONE



DATI

thrashing

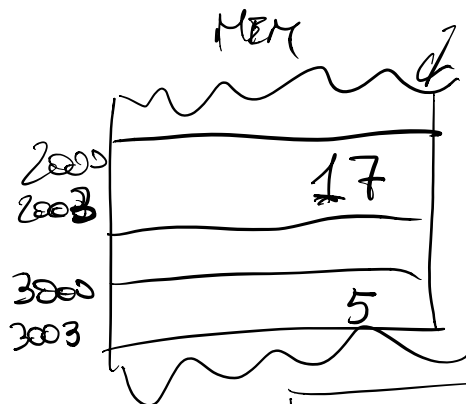
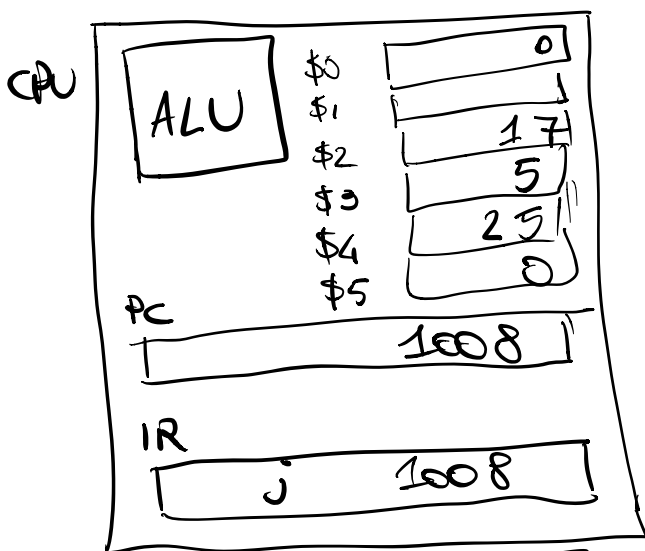
ESEMPIO

PROGRAMMA ASSEMBLY MIPS 32

```

1000: lw    $2, 2000($0)
1004: add   $3, $0, $0
1008: add   $4, $3, $0
1012: mult  $4, $4, $4
1016: slt   $5, $4, $2
1020: beq   $5, $0, +8
1024: addi  $3, $3, +1
1028: j     1008
1032: sw    $3, 3000($0)
  
```

$\$2 \leftarrow 2000$
 $\$3 \leftarrow \$0 + \$0$
 $\$4 \leftarrow \$3 + \$0$
 $\$4 \leftarrow \$4 * \$4$
 $\$5 \leftarrow \$4 < \$2$
 PC+8 se $\$5 = \0
 $\$3 \leftarrow \$3 + 1$



- 1) FETCH
- 2) DECODE
- 3) EXECUTE

*
if $\$4 \geq \2
then
PC ← 1032

$$3000 \leftarrow \sqrt{2000}$$

lw	LOAD WORD
add	ADD
mult	MULTIPLY
slt	SET IF LESS THAN
beq	BRANCH IF EQUAL
addi	ADD IMMEDIATE
j	JUMP
sw	STORE WORD