

Idoneità di Informatica

Lezione 1

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Università degli Studi di Bergamo

A.A. 2026-2027

Studenti

- Laurea triennale in
Lingue e Letterature Straniere Moderne
 - Studi interculturali e transmediali
 - Studi linguistici, filologici e letterari

Corso

- Crediti: 3 CFU
- Ore di lezione: 18
- Ore di esercitazioni: 10
- Lezioni: giovedì alle ore 12,
dall'8 ottobre al 19 novembre
- Esercitazioni I (Studi Interculturali): 19 nov, 3
dic, 17 dic
- Esercitazioni L (Studi Linguistici): 19 nov, 26
nov, 10 dic

Esame

- Idoneità
- Esame scritto con 10 domande a risposta multipla
- 6 risposte corrette o più: idoneo
- Meno di 6 risposte corrette: non idoneo
- Possibilità di simulazioni durante l'ultima esercitazione

Libri di testo

- “Informatica per la Comunicazione, 3° ed.”
M. Verdicchio, Franco Angeli editore
- “Che cos’è un computer”
M. Verdicchio, Carocci editore
- “Che cos’è il digitale”
C. Scatturin, M. Verdicchio, Carocci editore

Riferimenti

- email: mario.verdicchio@unibg.it
- sito: <https://cs.unibg.it/verdicch/idi.html>

Idoneità di Informatica

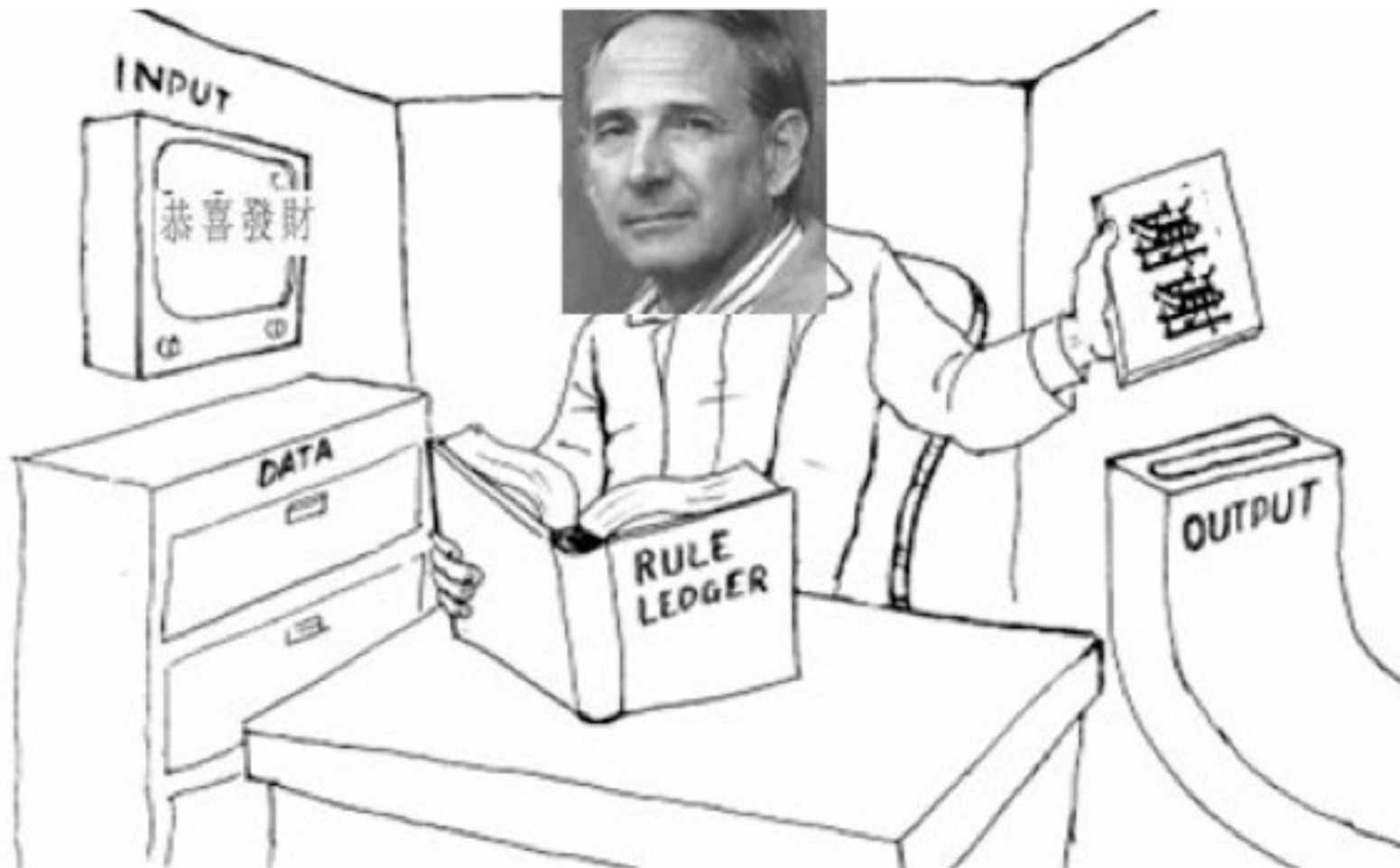
Idoneità di **Informatica**

informazione



automatica





La stanza cinese

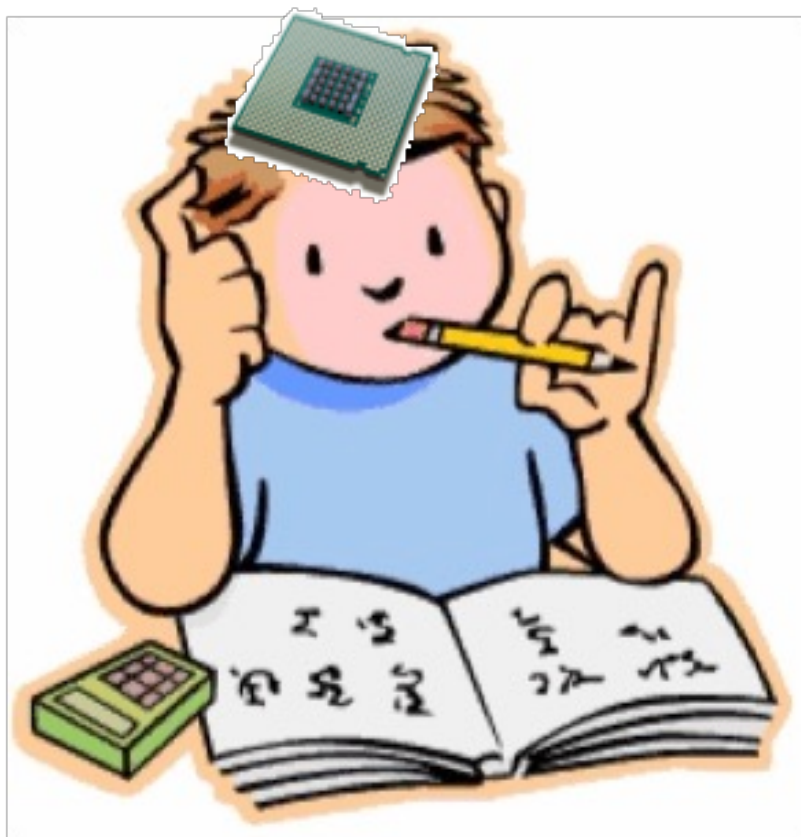


Andiamo a vedere che cosa c'è dentro.

Hardware



Noto in italiano come “processore”, la CPU (Central Processing Unit) è la parte del computer che esegue le operazioni.



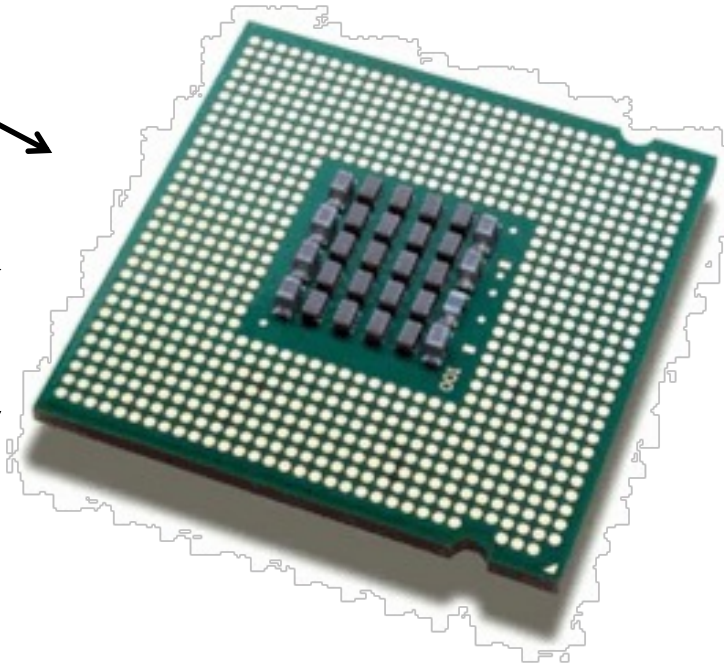
CPU

La CPU è fatta di due parti:
la ALU (Arithmetic-Logical Unit) esegue le operazioni
aritmetiche e logiche.

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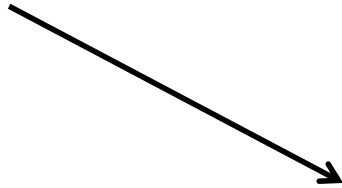


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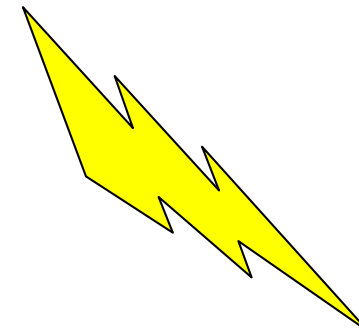
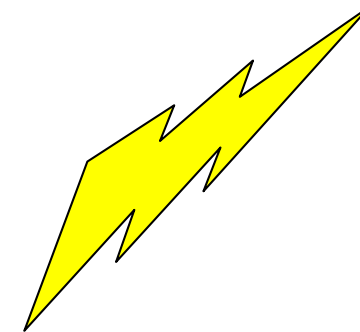
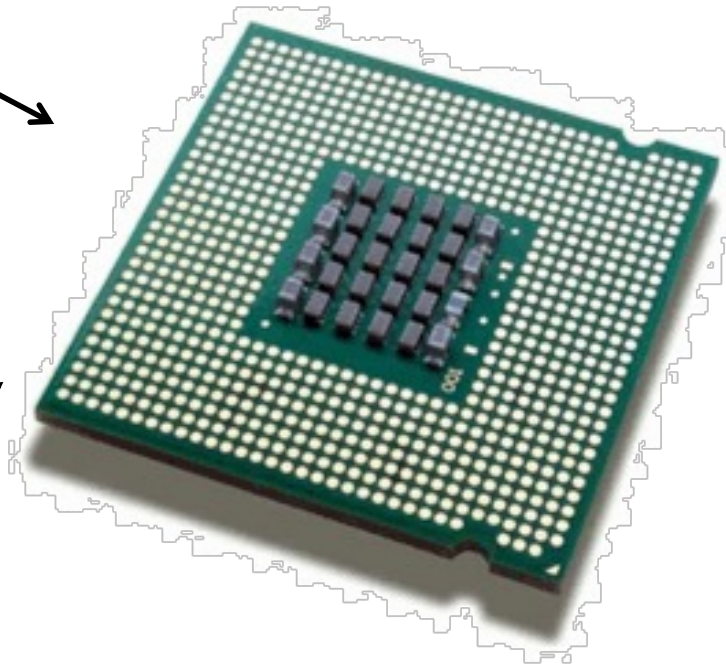
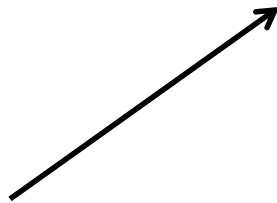
ALU

La CU (Control Unit) è la parte che controlla il trasferimento di dati da una parte all'altra del computer.

print



“ciao”



CU

Da dove vengono i dati elaborati dalla CPU?

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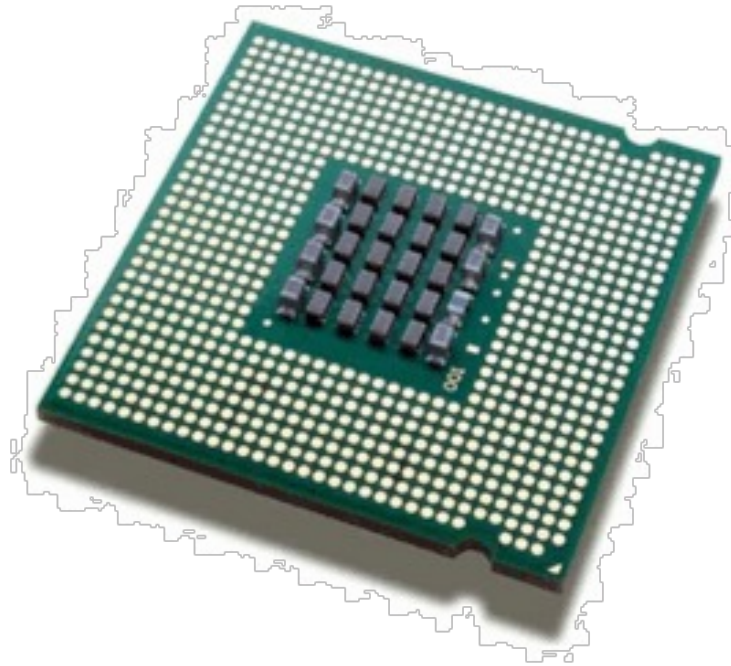
print

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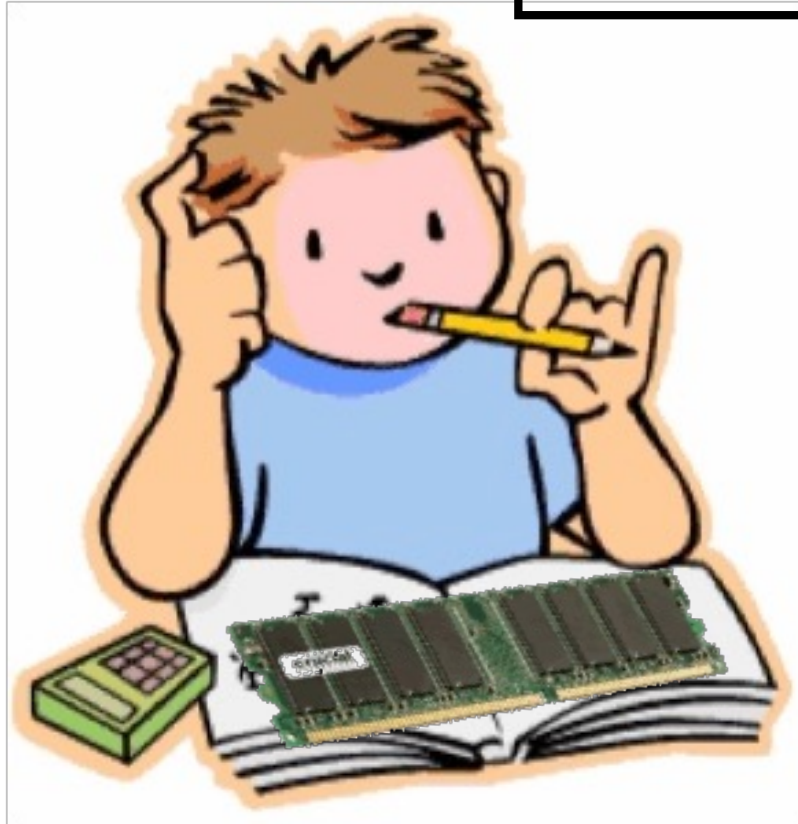
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“ciao”

?

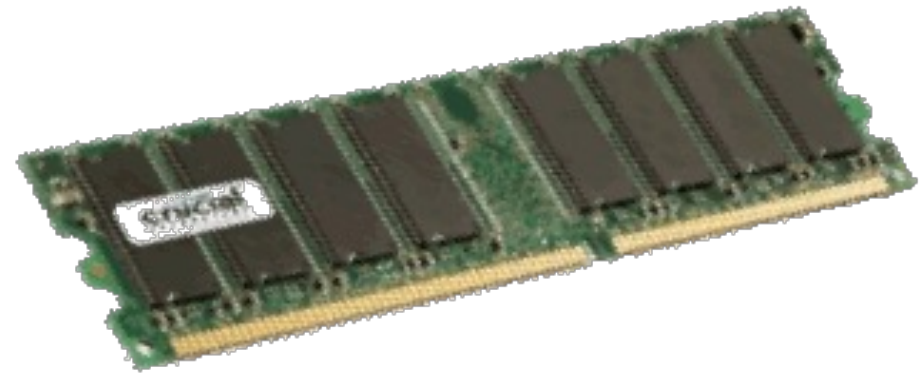
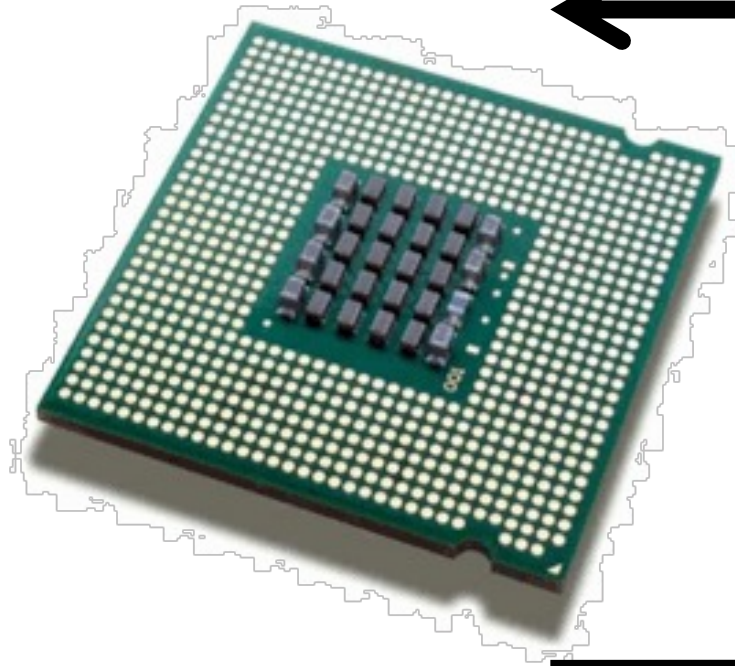


Un altro componente del computer corrisponde al quaderno in cui sono conservati i dati da elaborare, e da cui li preleviamo.
Nel computer il componente si chiama RAM (Random Access Memory).



RAM

operazioni, operandi



risultati

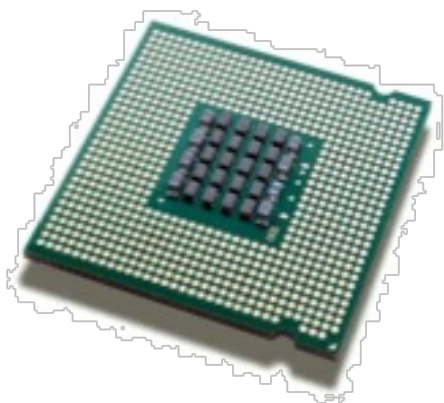


Vediamo come gli altri componenti partecipano alle operazioni del computer.

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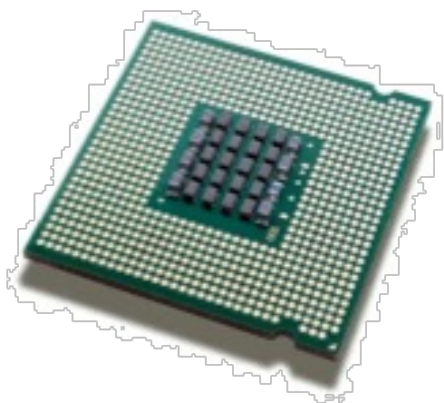
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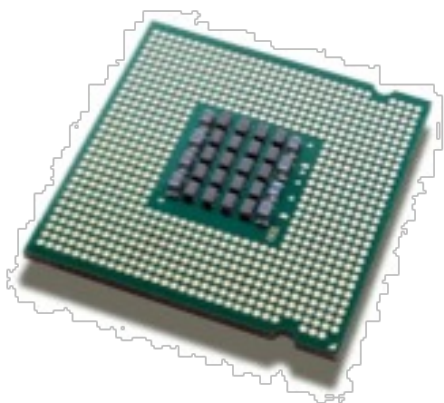
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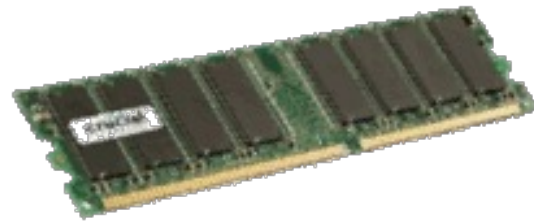
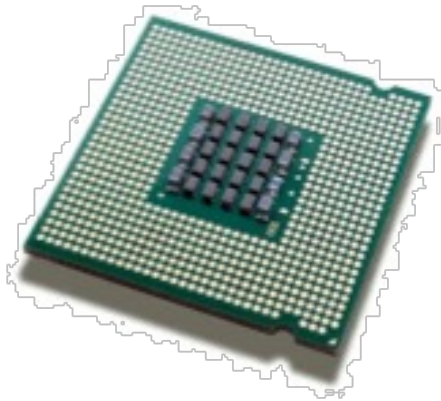
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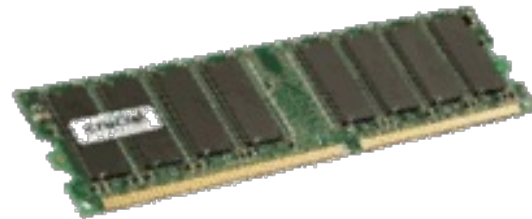
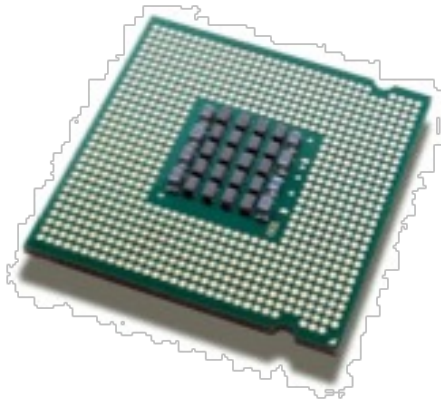


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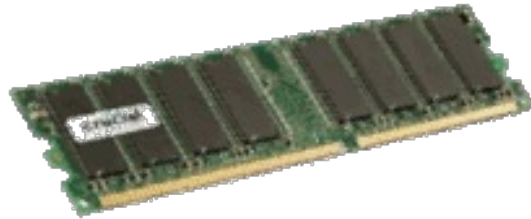
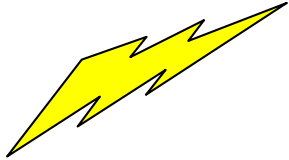
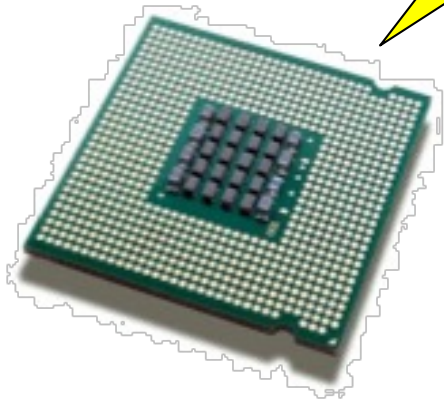


← print

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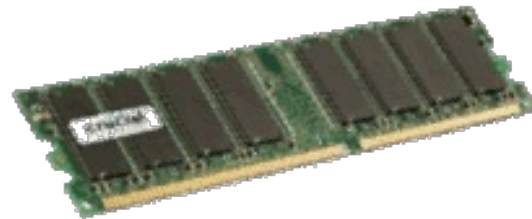
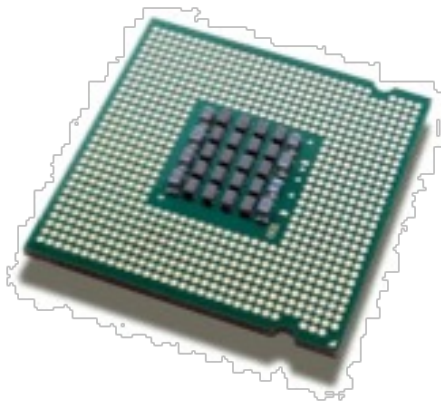


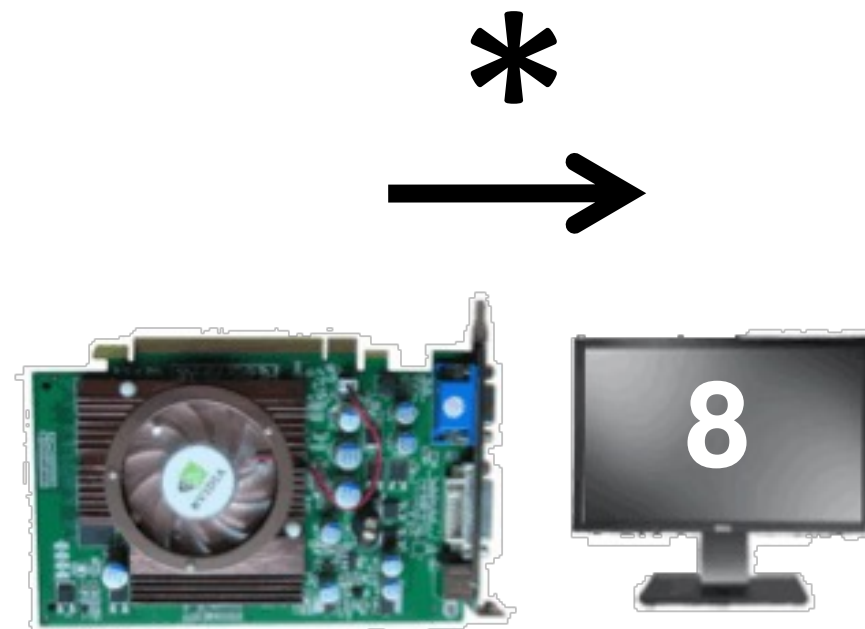
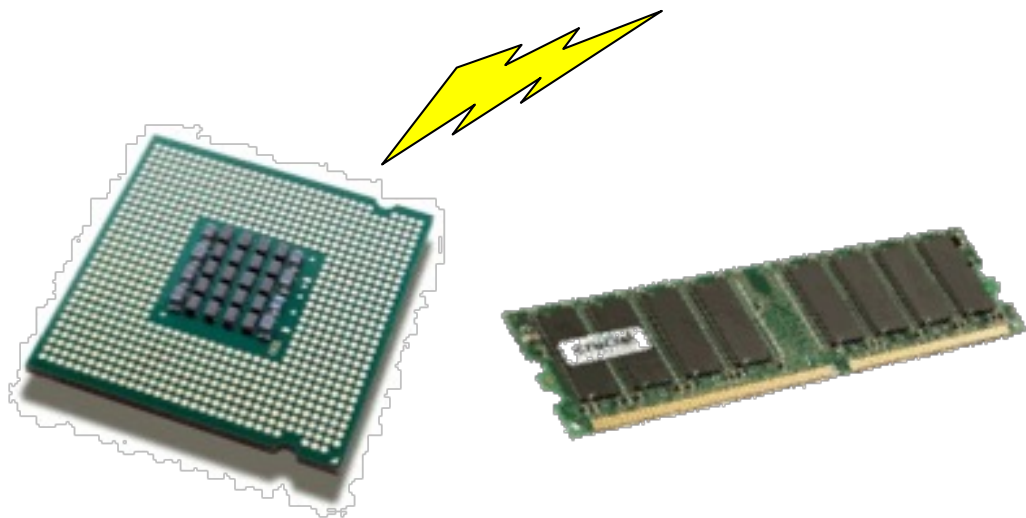
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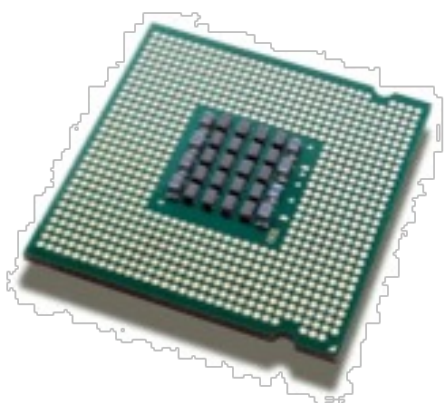


scheda grafica

→ 8







Periferica





Periferiche di input





**Periferiche
di output**



Wii controller
(Nintendo)



PS3 Dual Shock
controller (Sony)



iPhone touch
screen (Apple)



USB stick
(Lacie)

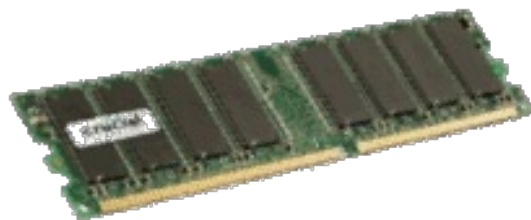
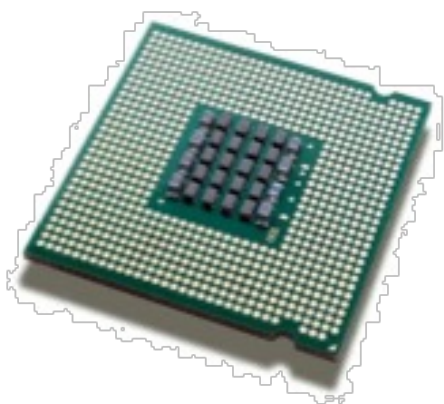


External Hard
Disk (WD)





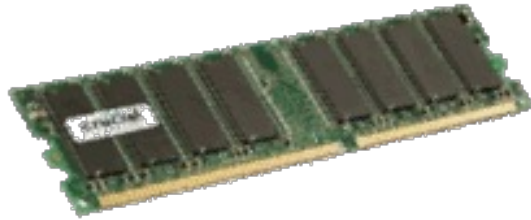




C'è un altro dispositivo di memoria all'interno del computer.

HD

RAM vs HD



Elettronica

Magnetica

Volatile

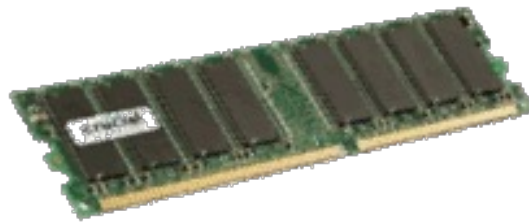
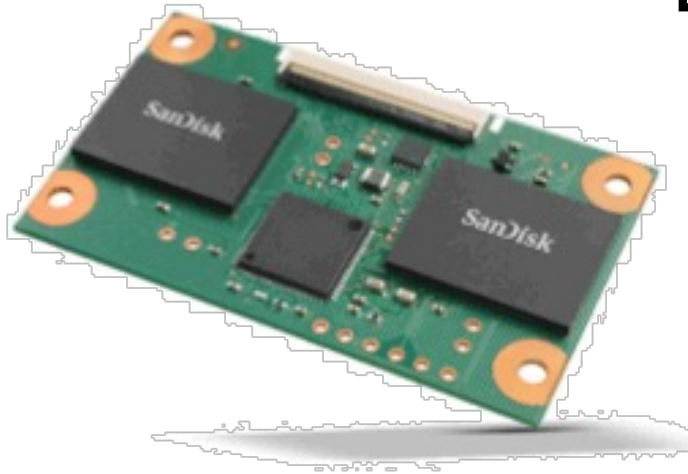
Non volatile

Veloce

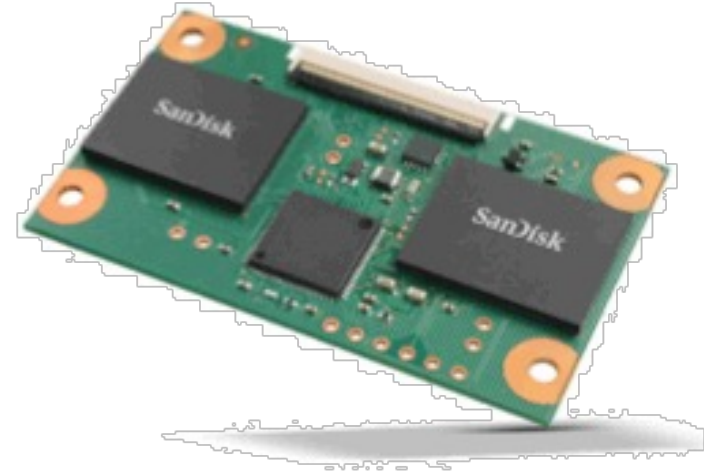
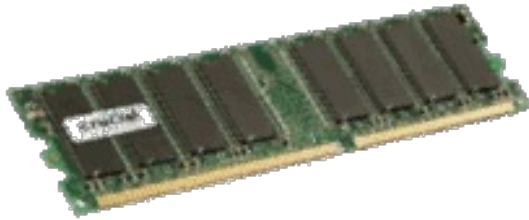
Lenta

Novità tecnologica degli anni recenti.

SSD



RAM vs SSD



Elettronica

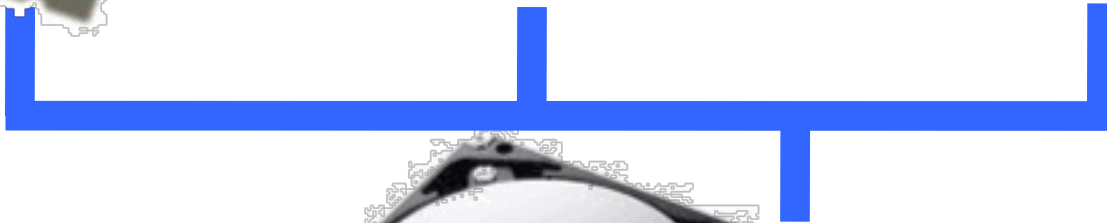
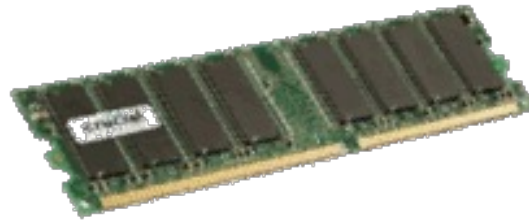
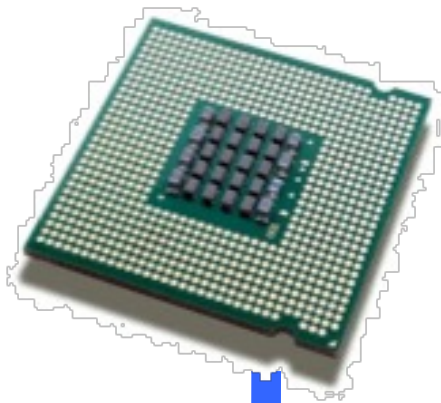
Elettronica

Volatile

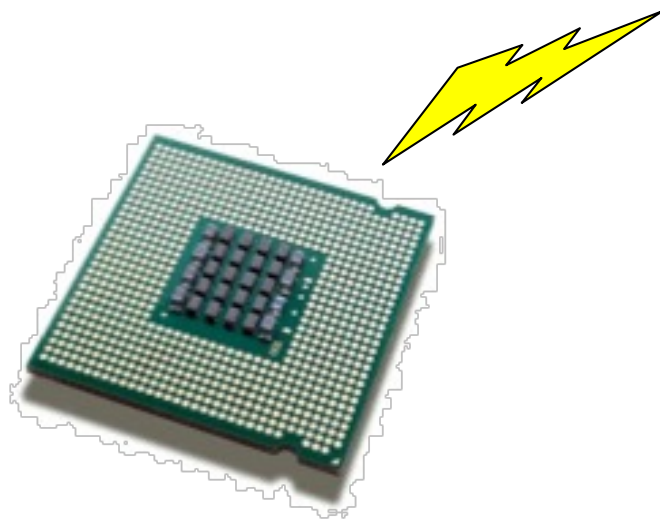
Non volatile

Veloce

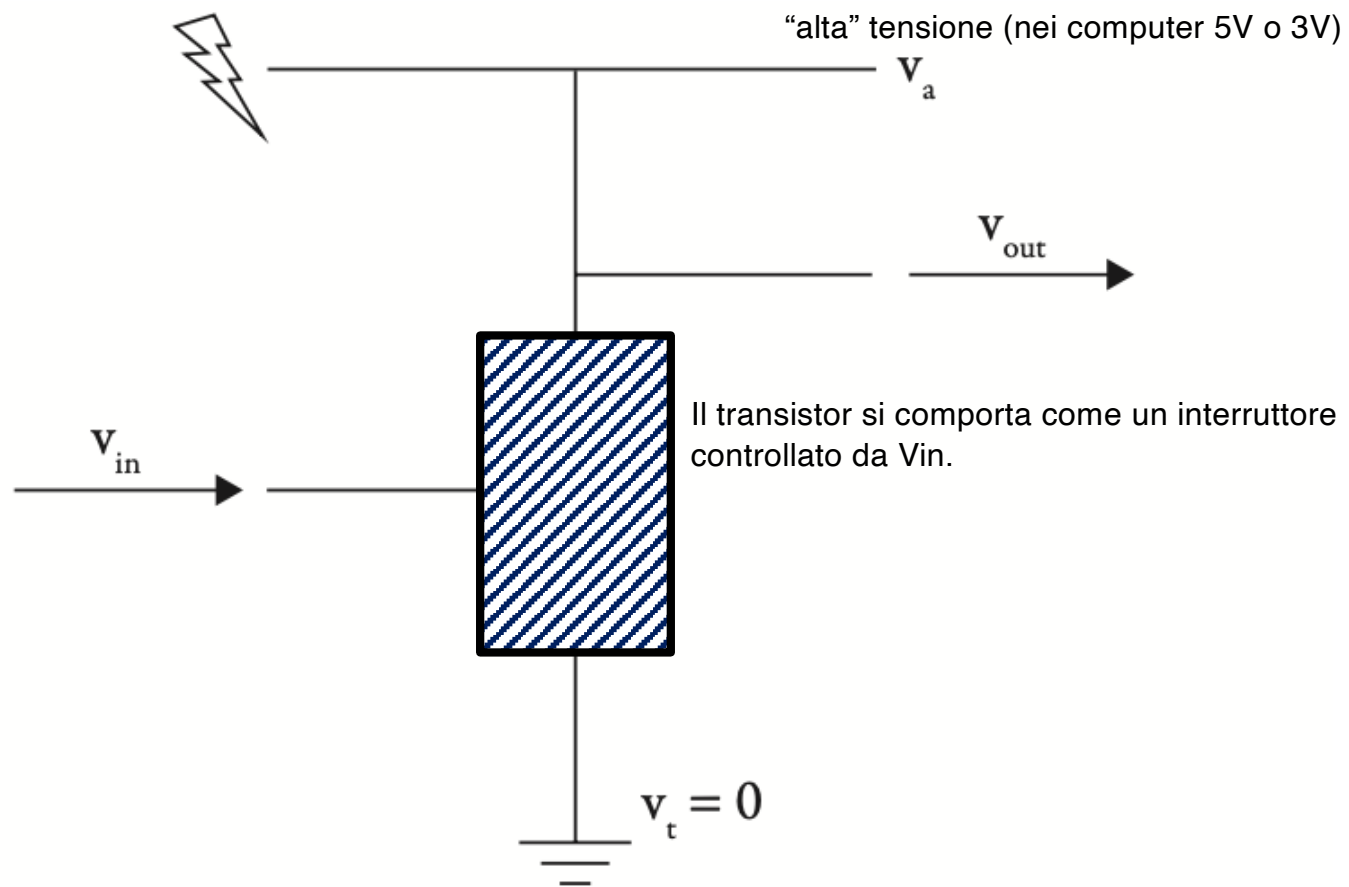
Veloce*



Bus



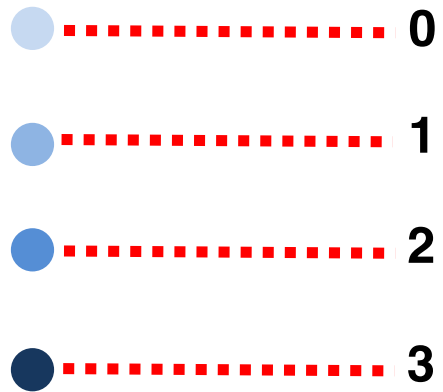
Un transistor



Il transistor si comporta come un interruttore controllato da V_{in} .

Terra: non c'è tensione qui. L'elettricità scorre da punti a tensione più alta a punti a tensione più bassa.

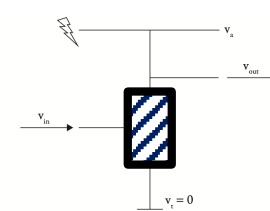
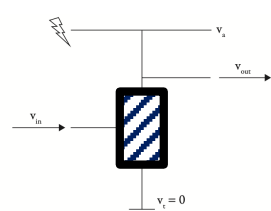
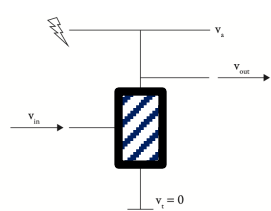
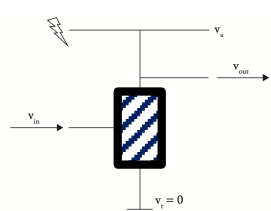
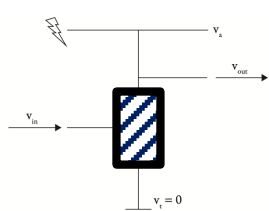
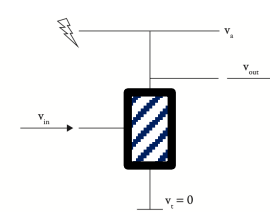
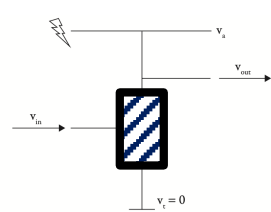
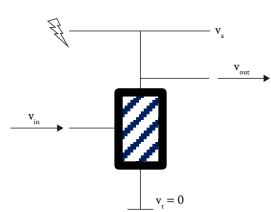
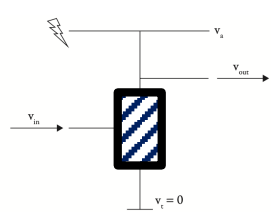
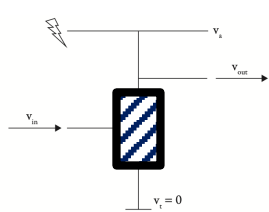
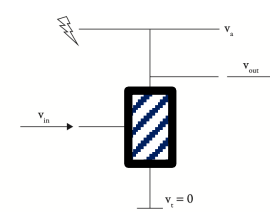
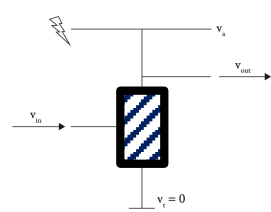
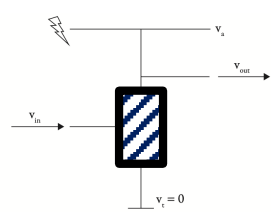
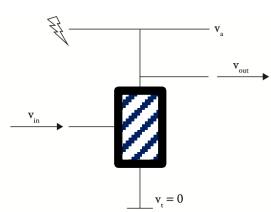
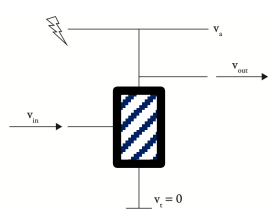
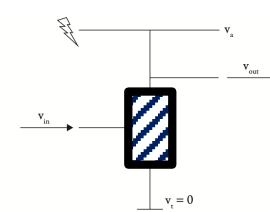
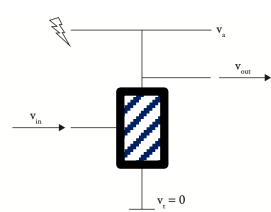
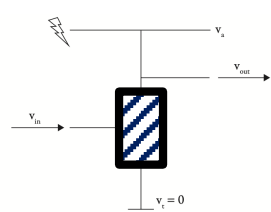
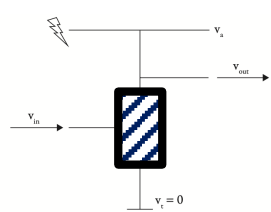
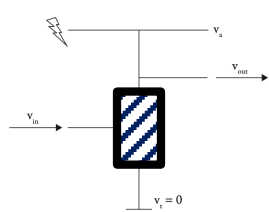
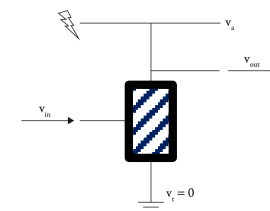
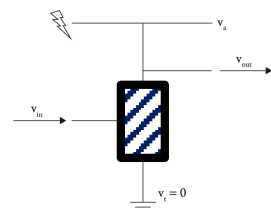
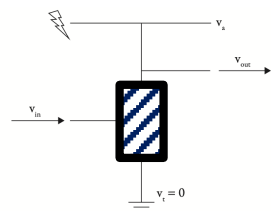
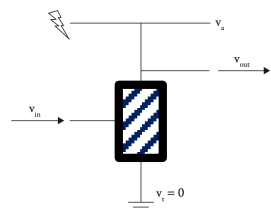
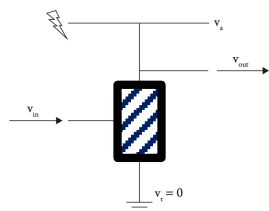
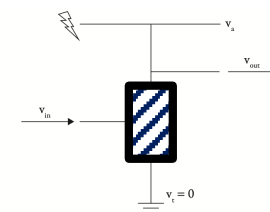
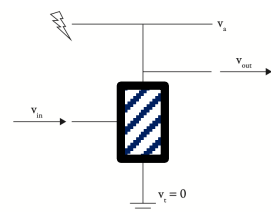
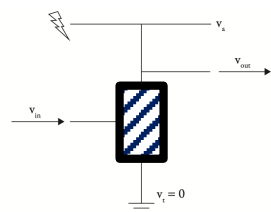
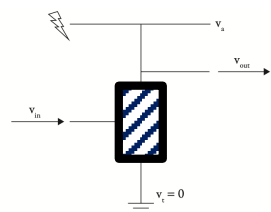
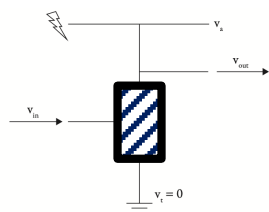
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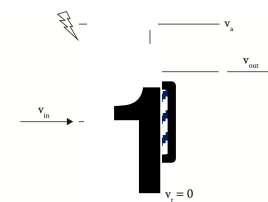
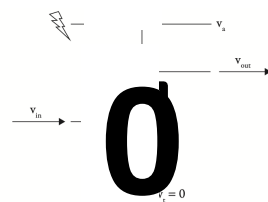
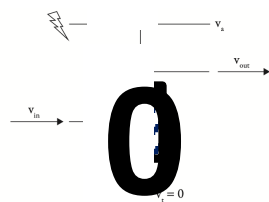
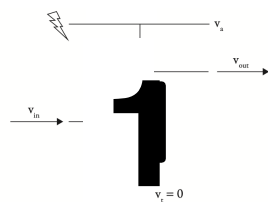
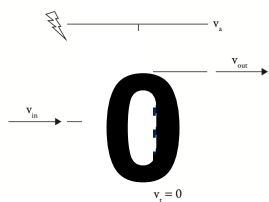
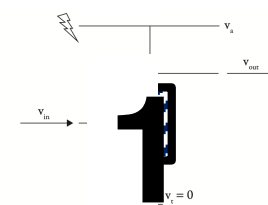
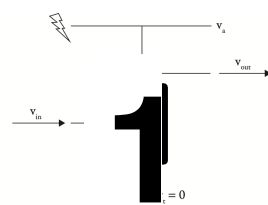
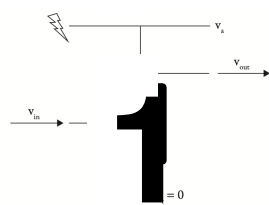
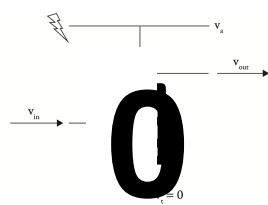
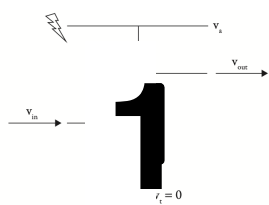
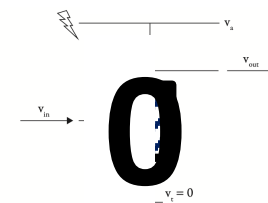
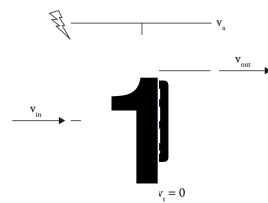
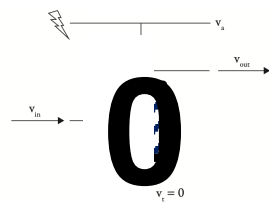
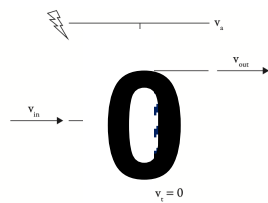
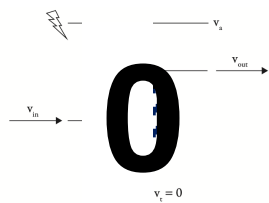
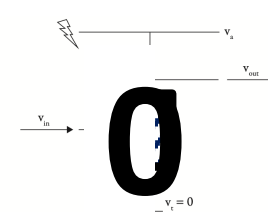
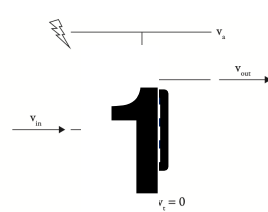
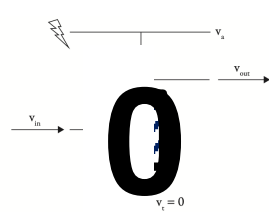
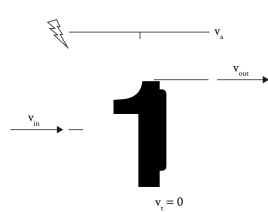
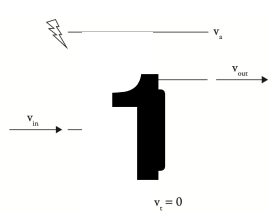
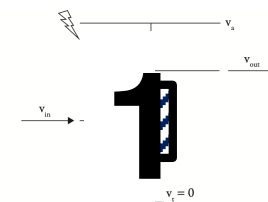
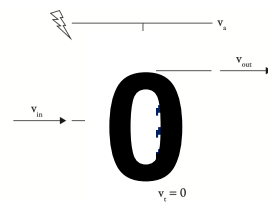
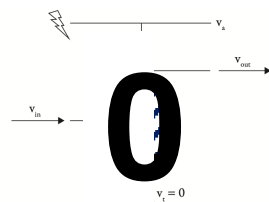
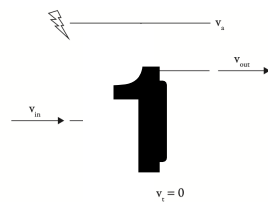
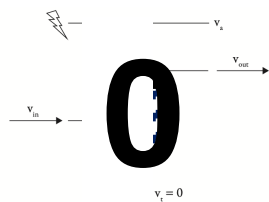
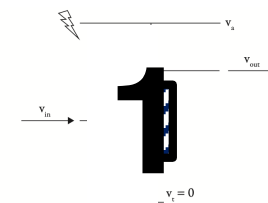
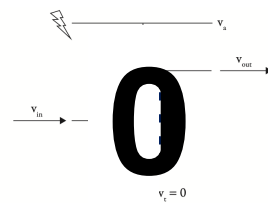
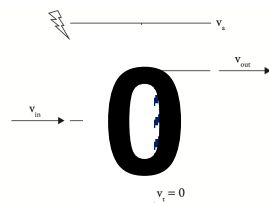
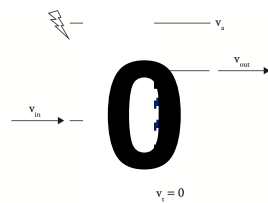
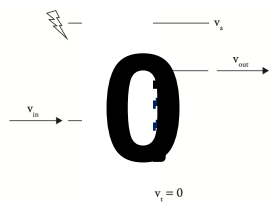


CODIFICA BINARIA

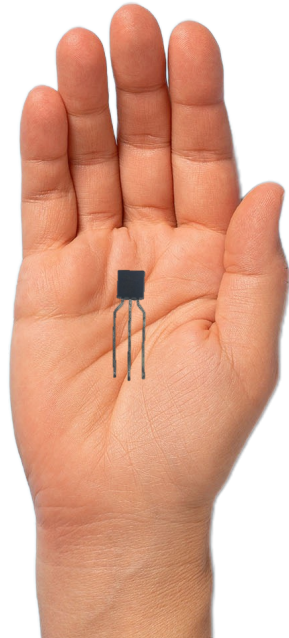
v_{out} bassa 0

v_{out} alta 1





un transistor degli anni '50



1,3 centimetri

un transistor oggi

2 nanometri

0

1

bit

binary digit

Multipli

1 Kb (kilo) = 1000 b

1 Mb (mega) = 1 milione b

1 Gb (giga) = 1 miliardo b

1 Tb (tera) = 1000 miliardi b

bit e Byte

8 bit (b) = 1 Byte (B)

00101100


un Byte

Multipli

1 KB (kilo) = 1000 B

1 MB (mega) = 1 milione B

1 GB (giga) = 1 miliardo B

1 TB (tera) = 1000 miliardi B

centinaia	decine	unità
5	0	0

Sistema “digitale”:
sistema basato su cifre il cui significato
è determinato dalla loro posizione.

10^2	10^1	10^0
centinaia	decine	unità
5	0	0

Sistema a base 10
Sistema decimale

Il sistema decimale

**{0;1;2;3;4;
5;6;7;8;9}**

237

237

2

1

0

$$2 \times 10^2 = 200$$

$$3 \times 10^1 = 30$$

$$7 \times 10^0 = 7$$