CIVIFORM

CODING E ROBOTICA

PER L'INNOVAZIONE SOCIALE

Cividale, gennaio-febbraio 2022

HARDWARE

HARDWARE

La parte fisica, tangibile, di un calcolatore.

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La parte fisica, tangibile, di un calcolatore.

Sostanzialmente immutabile, salvo rari casi.

HARDWARE

SOFTWARE

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Insieme dei programmi impiegati su un calcolatore.

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Insieme dei programmi impiegati su un calcolatore.

Installati dall’utente a seconda delle necessità.

SOFTWARE

FIRMWARE

FIRMWARE

Programma integrato nel calcolatore.

FIRMWARE

Programma integrato nel calcolatore.

Sovrintende la fase di avvio del calcolatore.

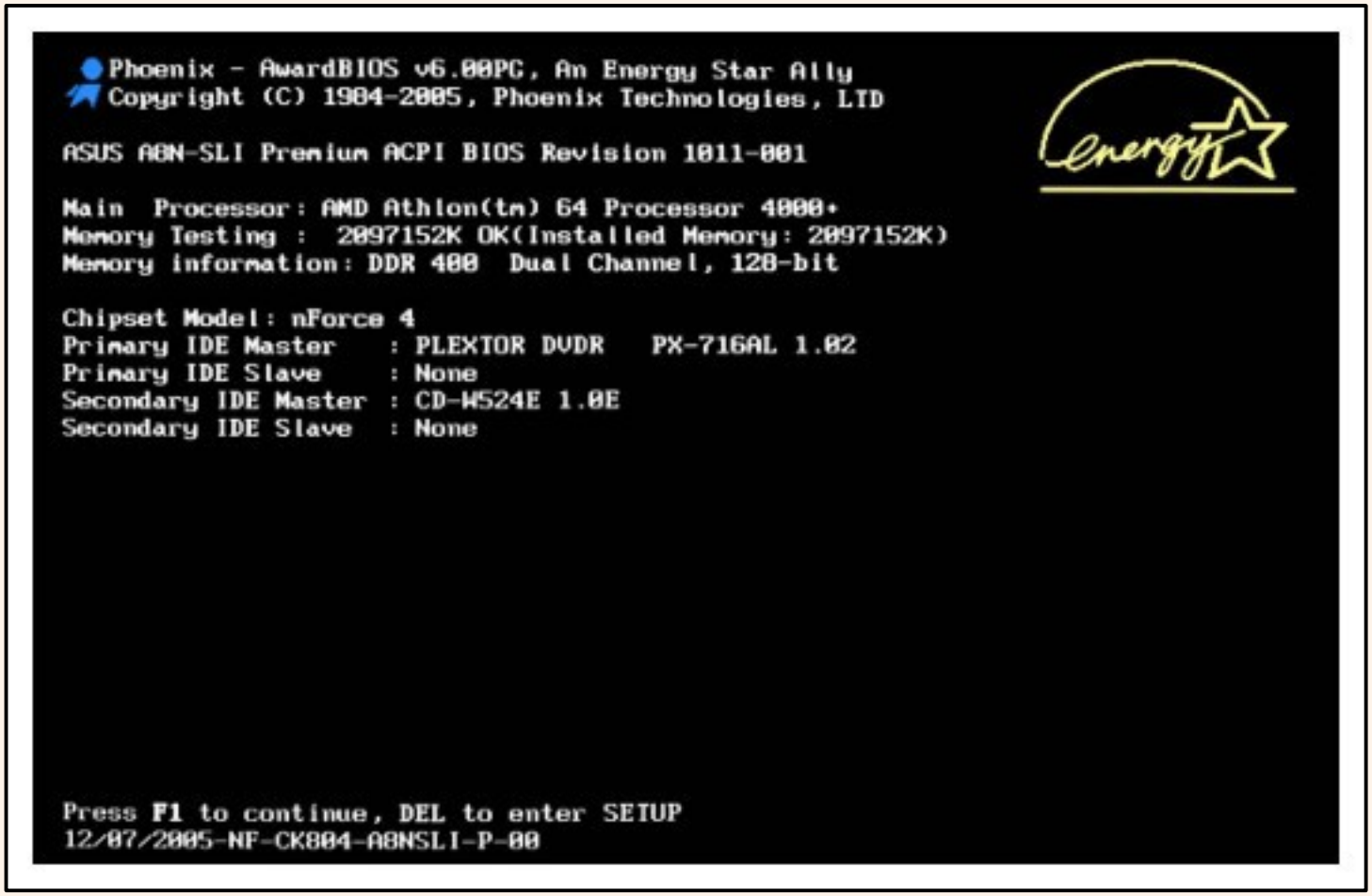
FIRMWARE

Programma integrato nel calcolatore.

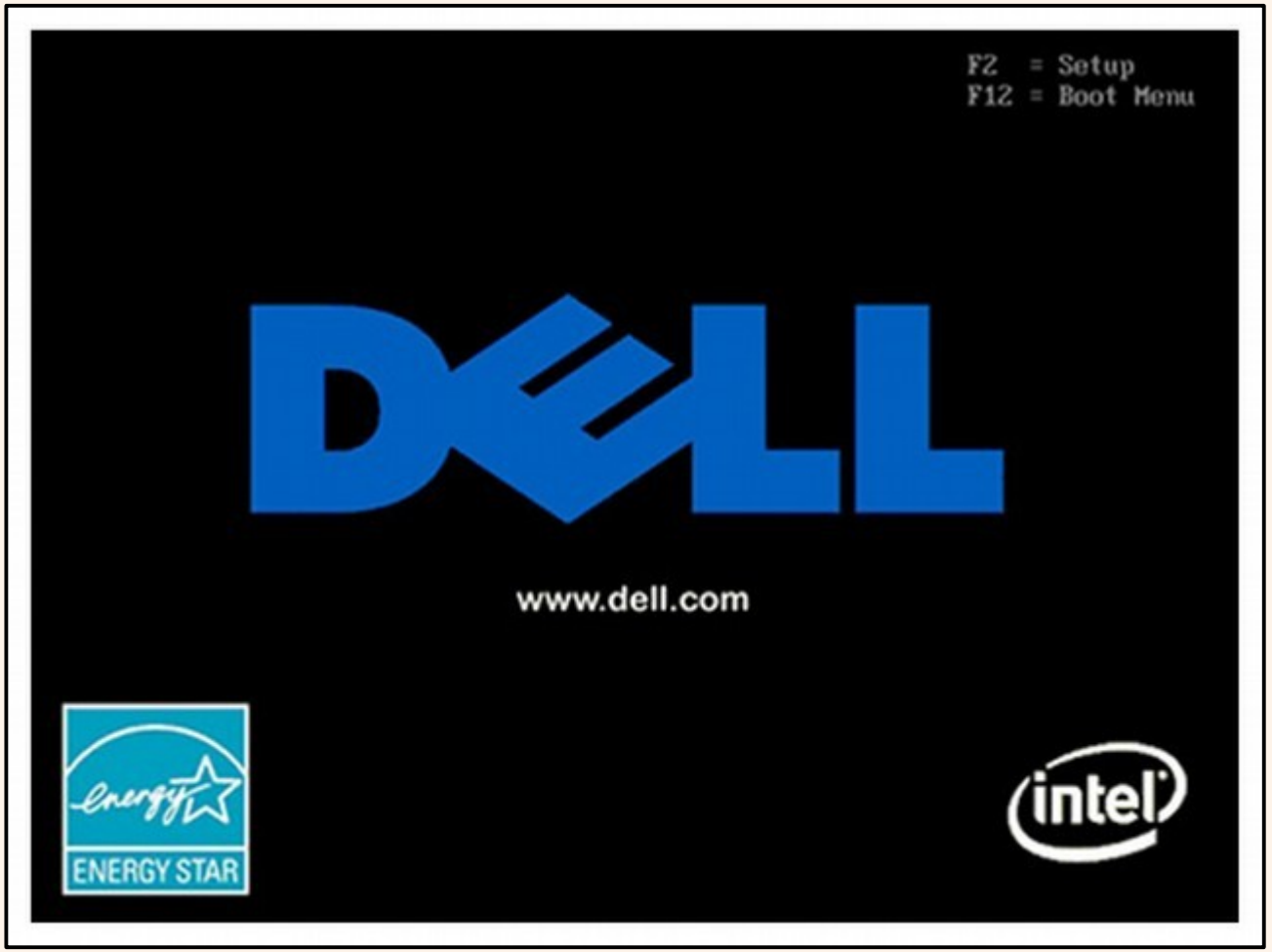
Sovrintende la fase di avvio del calcolatore.

Non modificabile dall’utente.

FIRMWARE

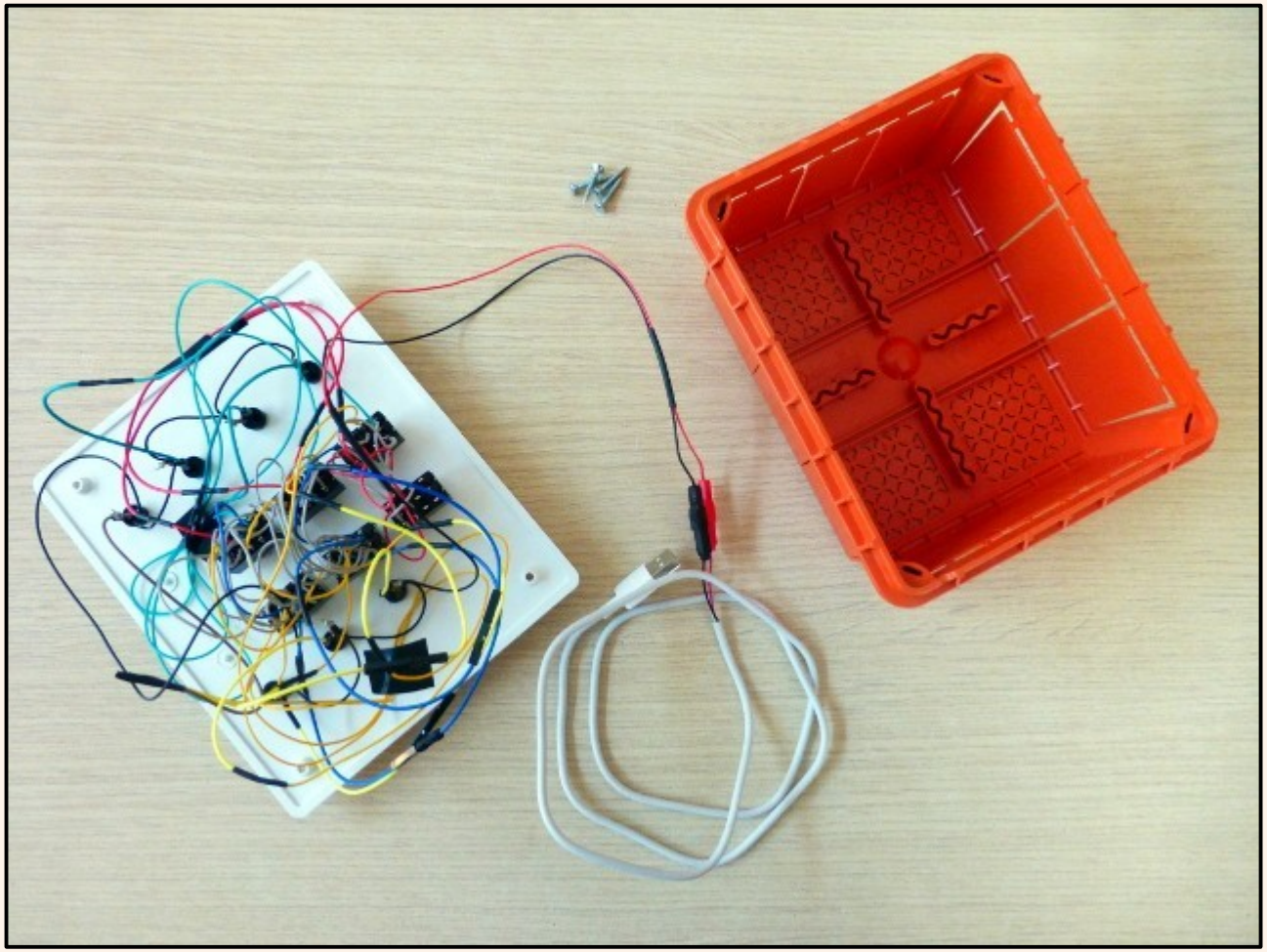

Phoenix - AwardBIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2005, Phoenix Technologies, LTD
ASUS A8N-SLI Premium ACPI BIOS Revision 1011-001
Main Processor: AMD Athlon(tm) 64 Processor 4000+
Memory Testing : 2097152K OK(Installed Memory: 2097152K)
Memory information: DDR 400 Dual Channel, 128-bit
Chipset Model: nForce 4
Primary IDE Master : PLEXTOR DVDR PX-716AL 1.02
Primary IDE Slave : None
Secondary IDE Master : CD-W524E 1.0E
Secondary IDE Slave : None
Press F1 to continue, DEL to enter SETUP
12/07/2005-NF-CK804-A8NSLI-P-00

FIRMWARE


F2 = Setup
F12 = Boot Menu
DELL
www.dell.com
energy
ENERGY STAR
intel

CIRCUITI CHE CALCOLANO?

CIRCUITI CHE CALCOLANO?



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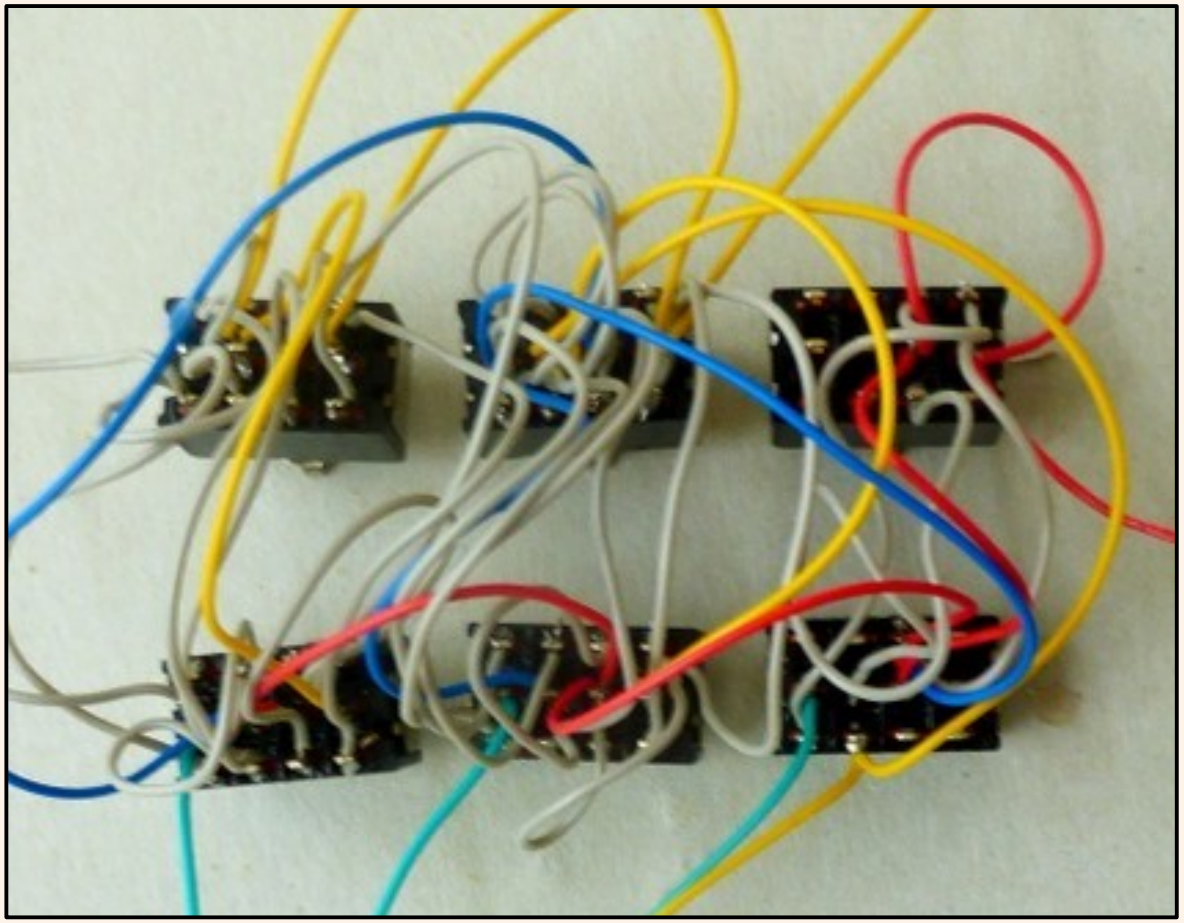

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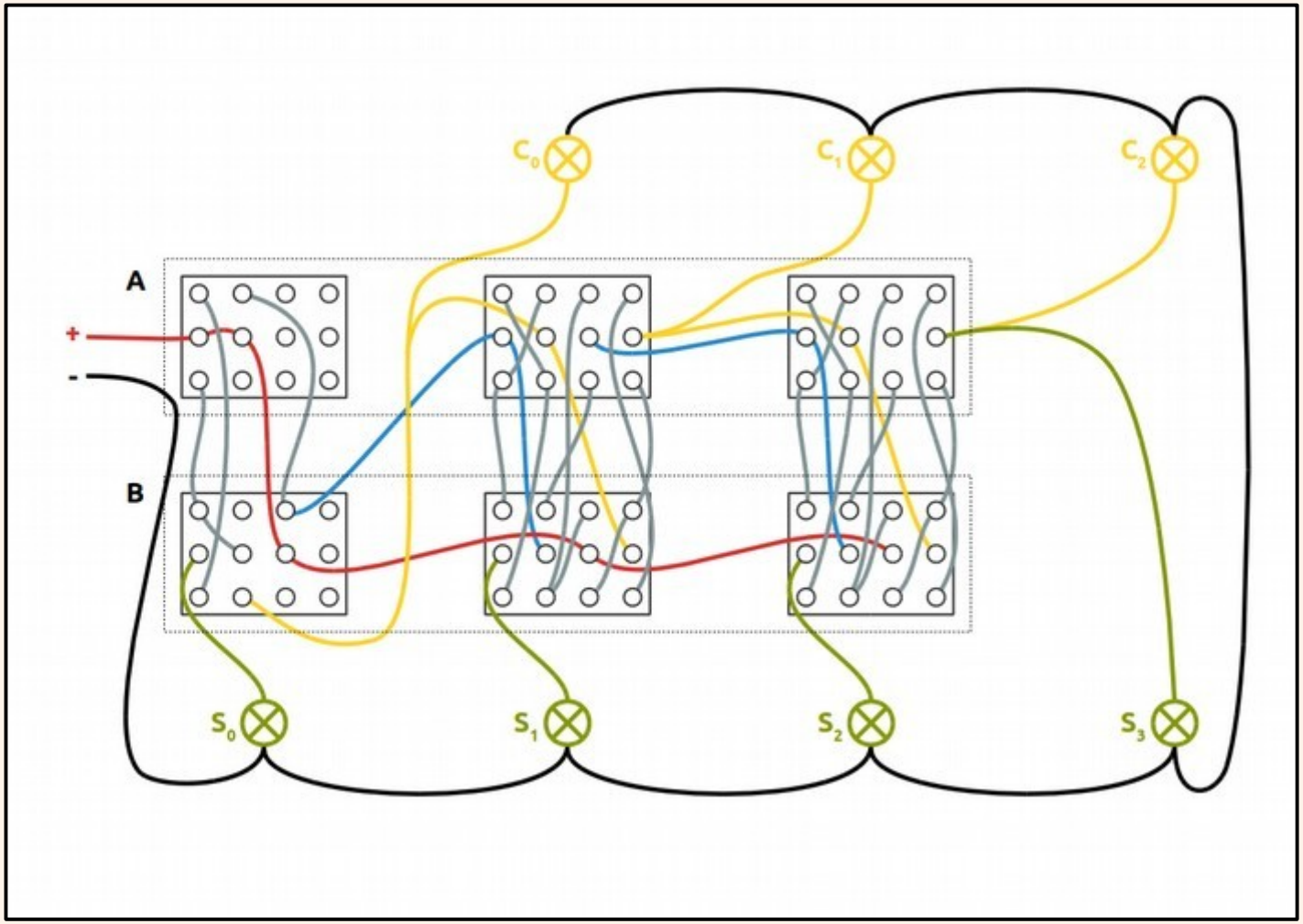
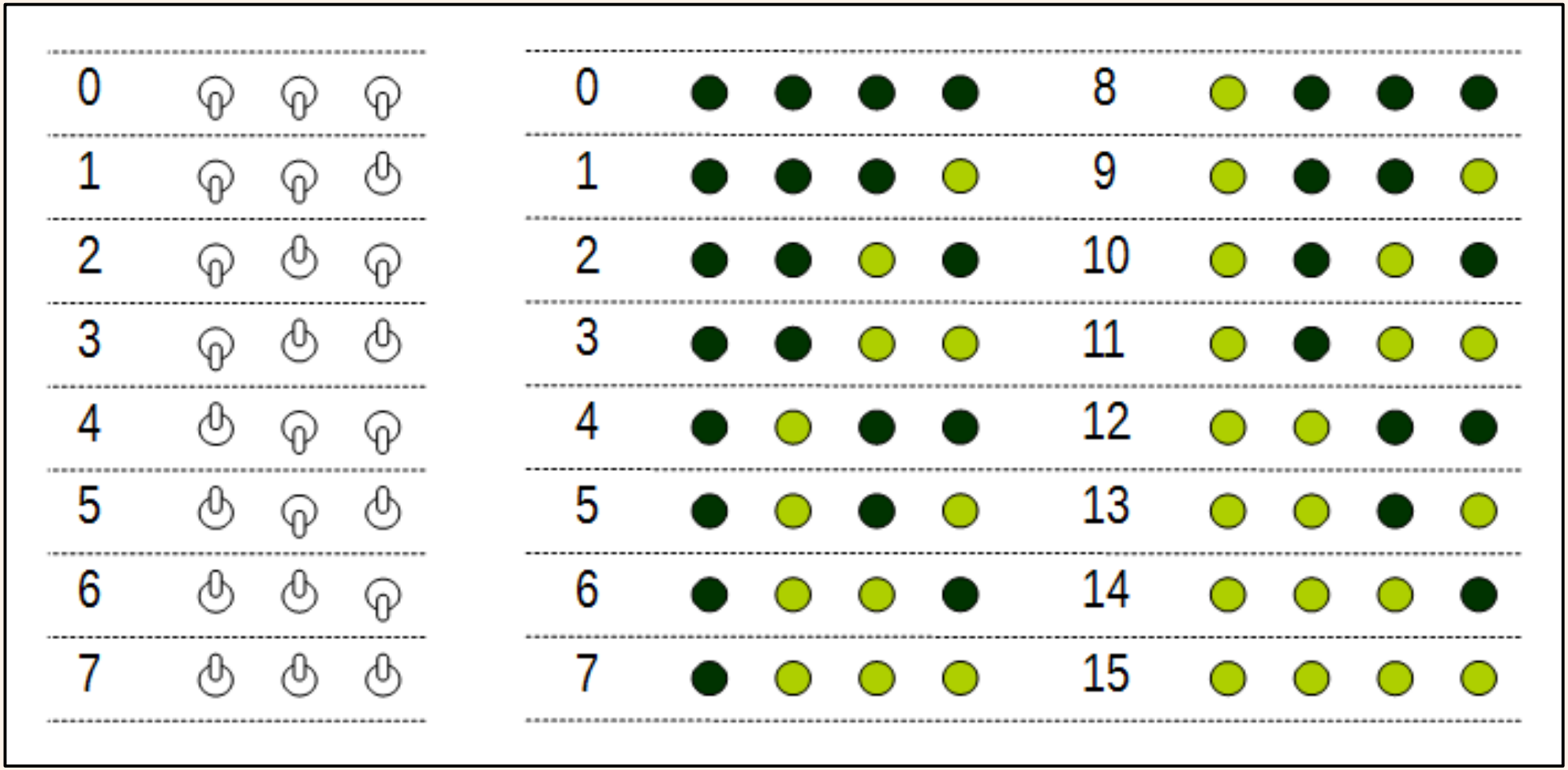
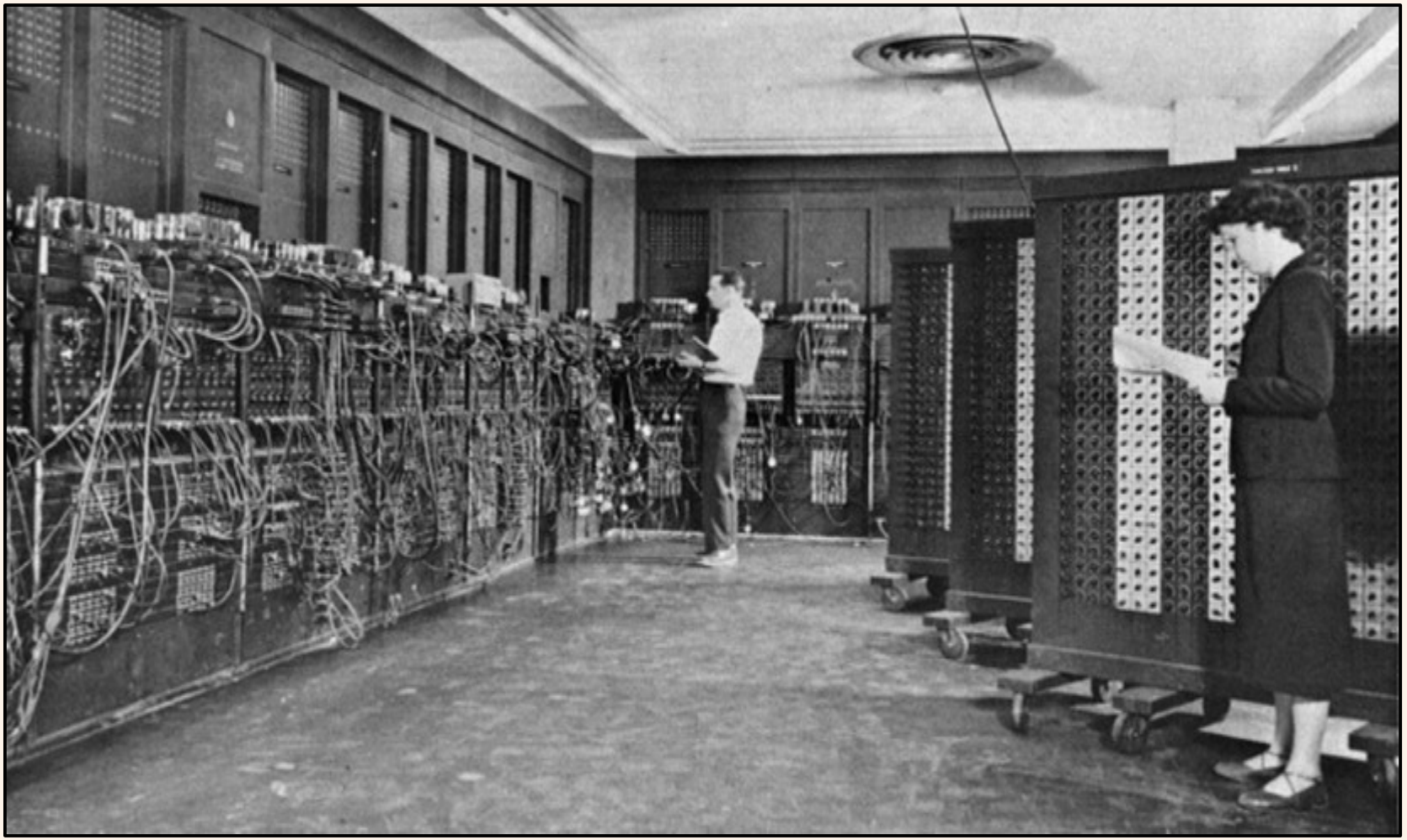


CIRCUITI CHE CALCOLANO?



ENIAC, 1947



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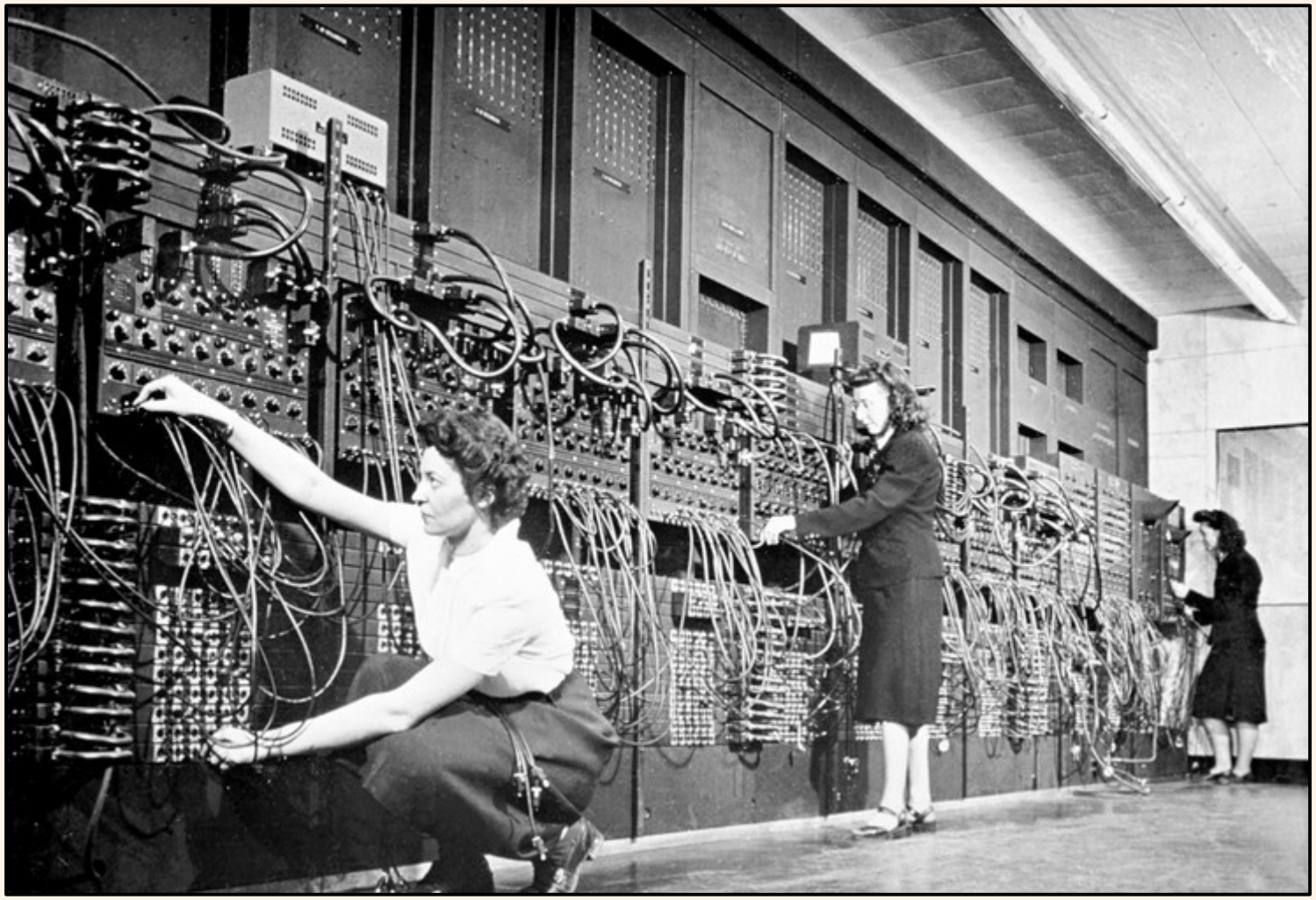
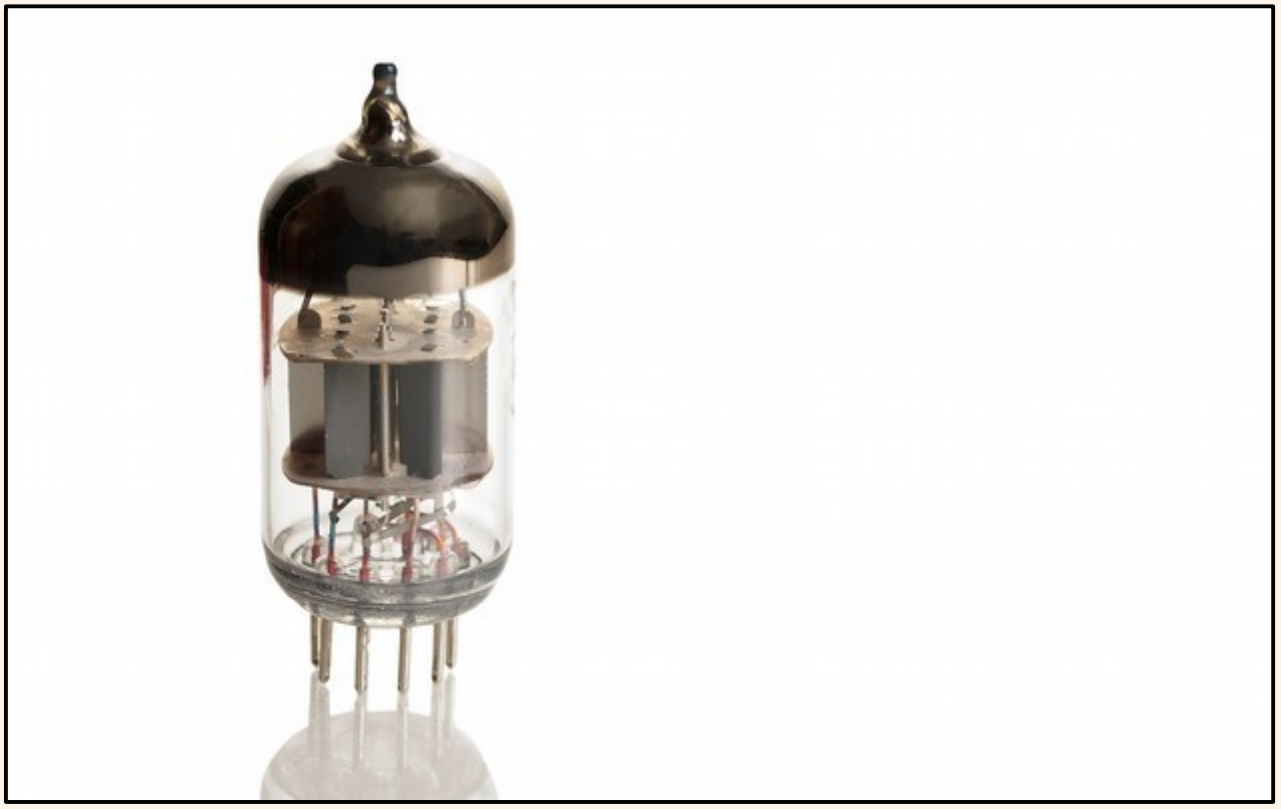


ENIAC, 1947



ELEA 9003, 1959

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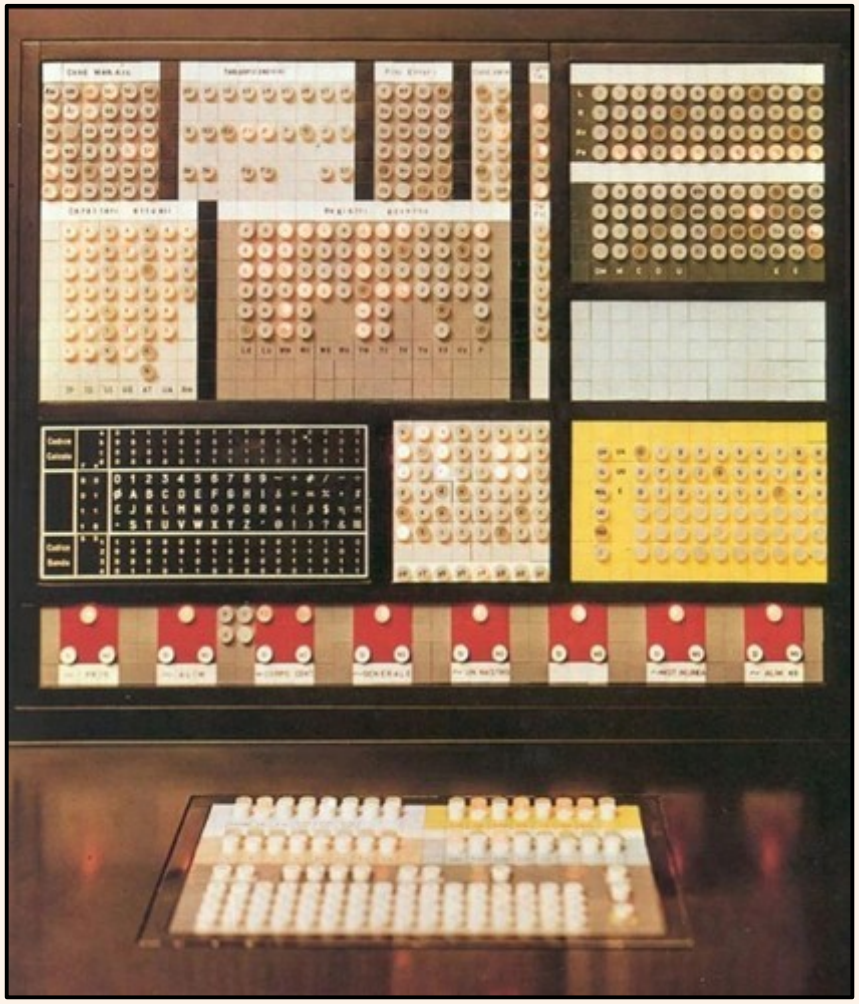

ELEA 9003, 1959

PDP-11, 1970

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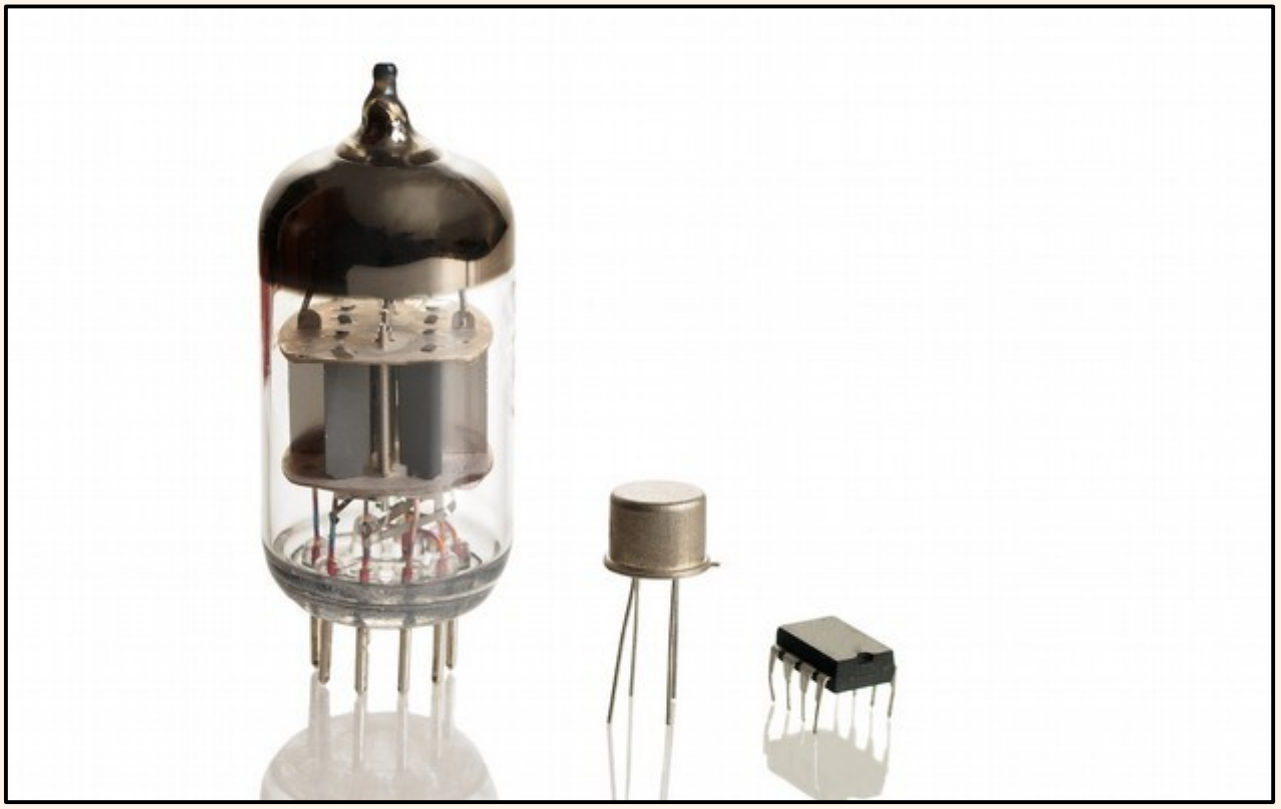

ALTAIR 8800, 1975

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APPLE II, 1977

COMMODORE VIC 20, 1980

SINCLAIR ZX81, 1981

COMMODORE 64, 1982

SINCLAIR ZX SPECTRUM, 1982

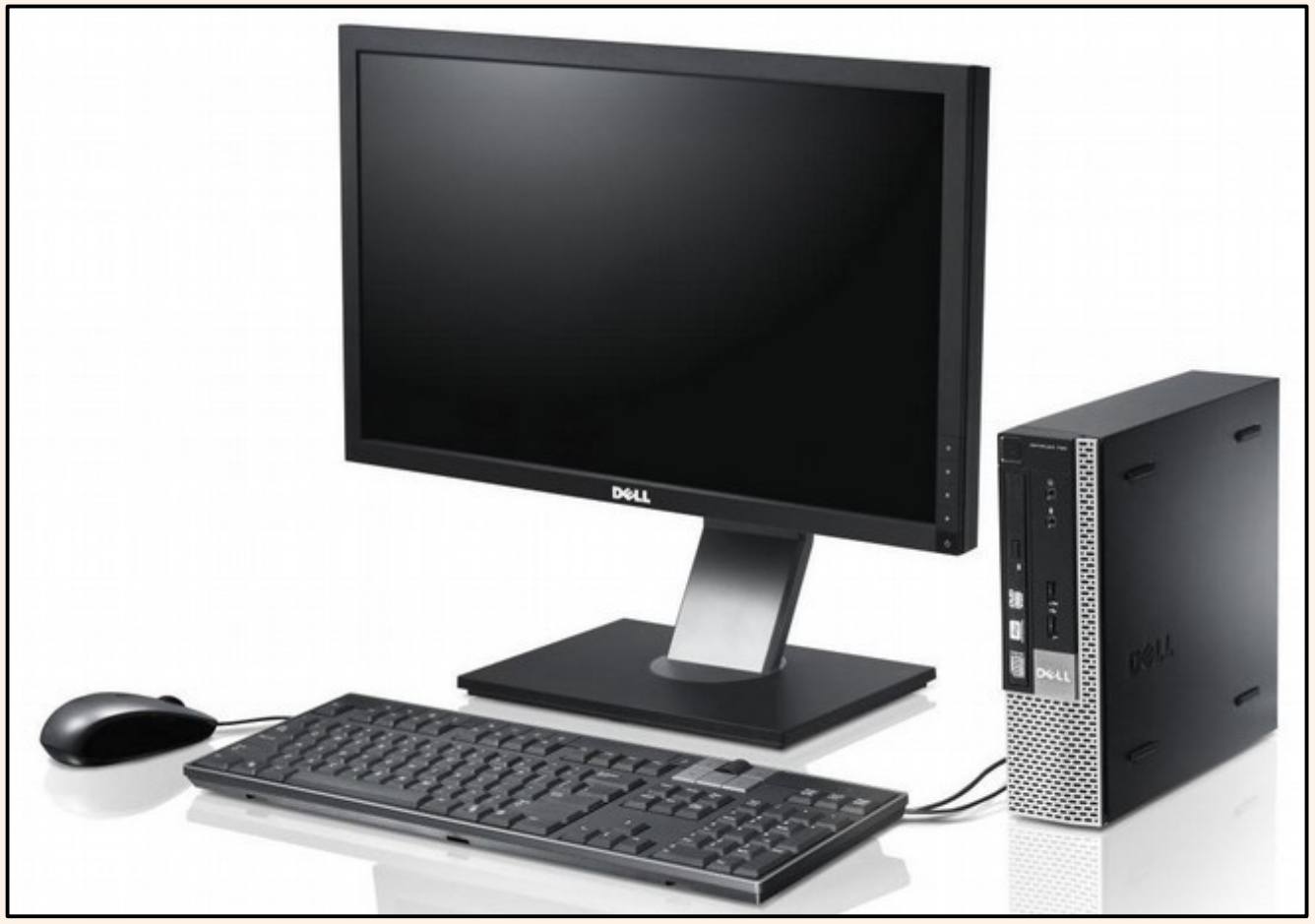
TOSHIBA MSX HX-10, 1984

COMMODORE 128, 1985

PC IBM, 1981

2020

2020



2020

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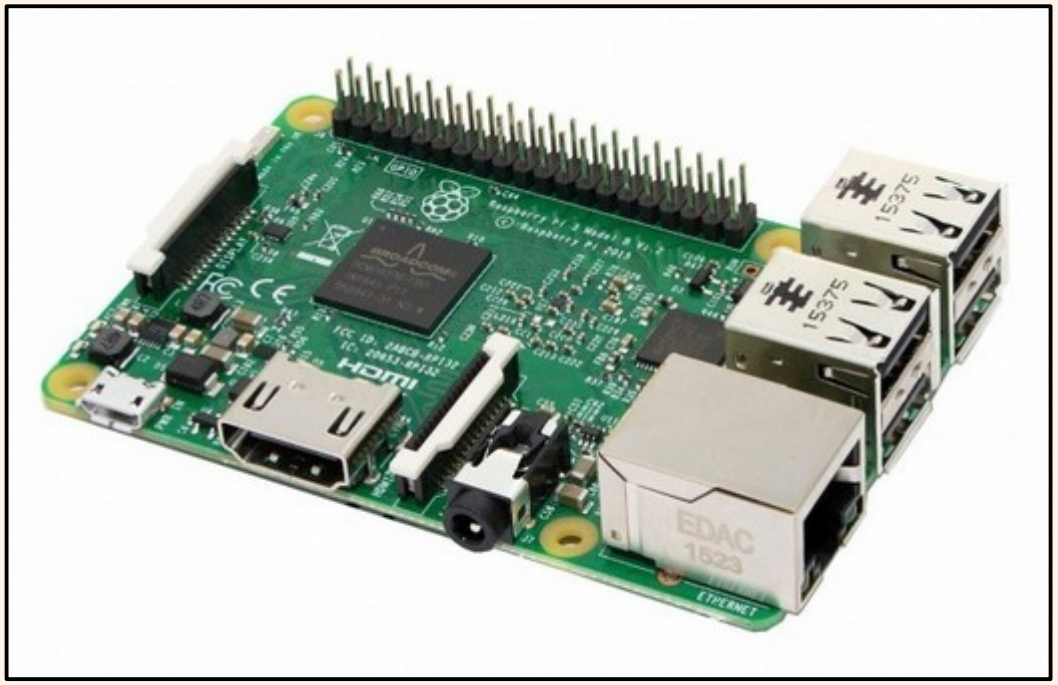
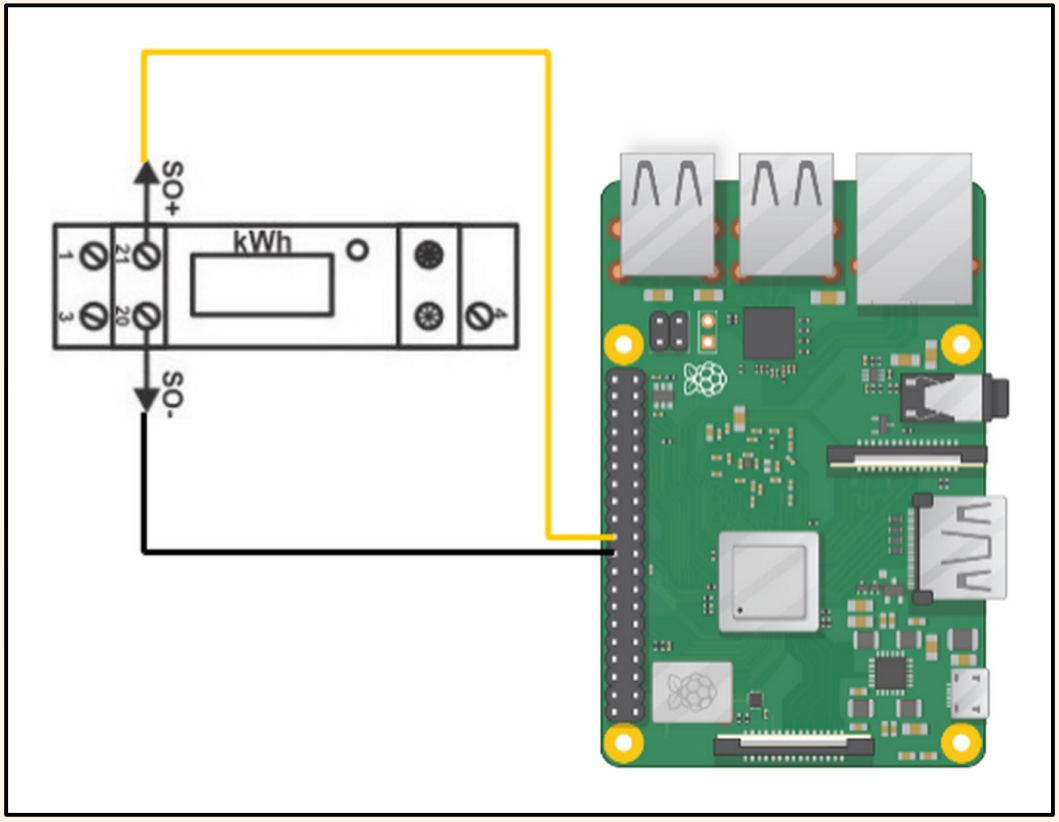


Raspberry Pi (2012)

2020



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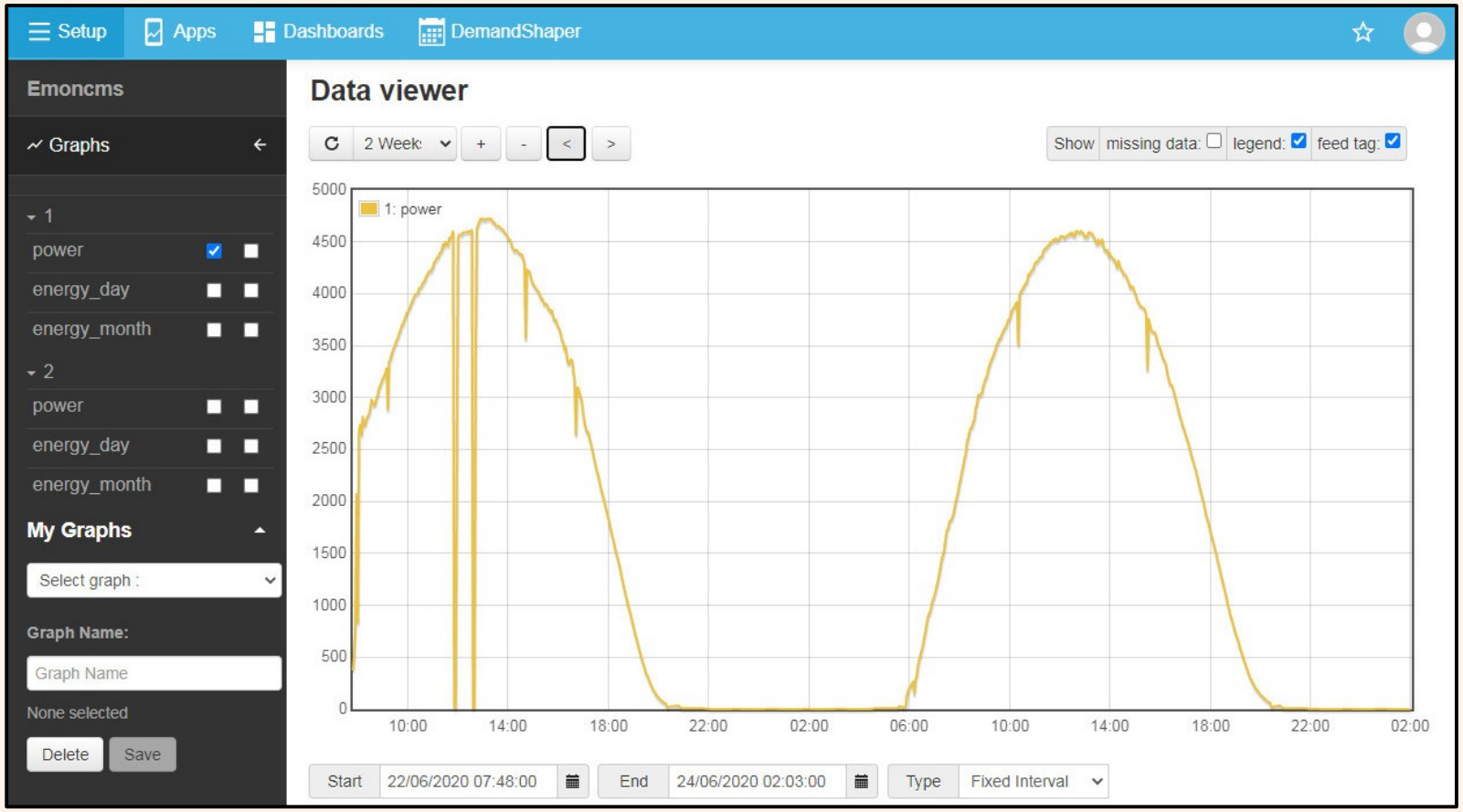

Raspberry Pi (2012)

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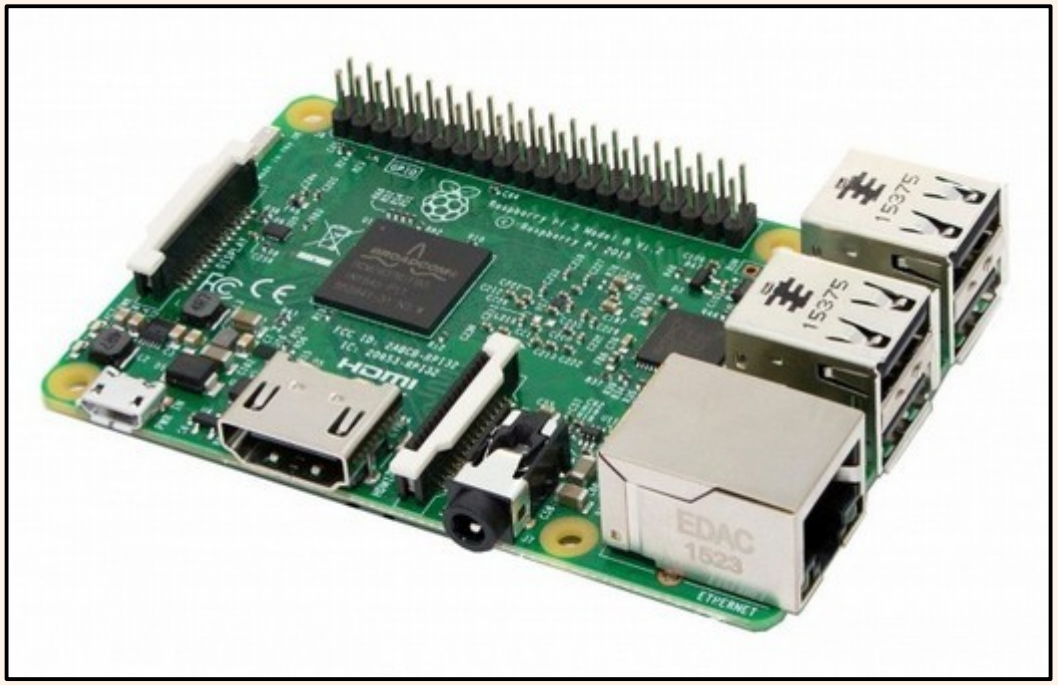

Raspberry Pi (2012)

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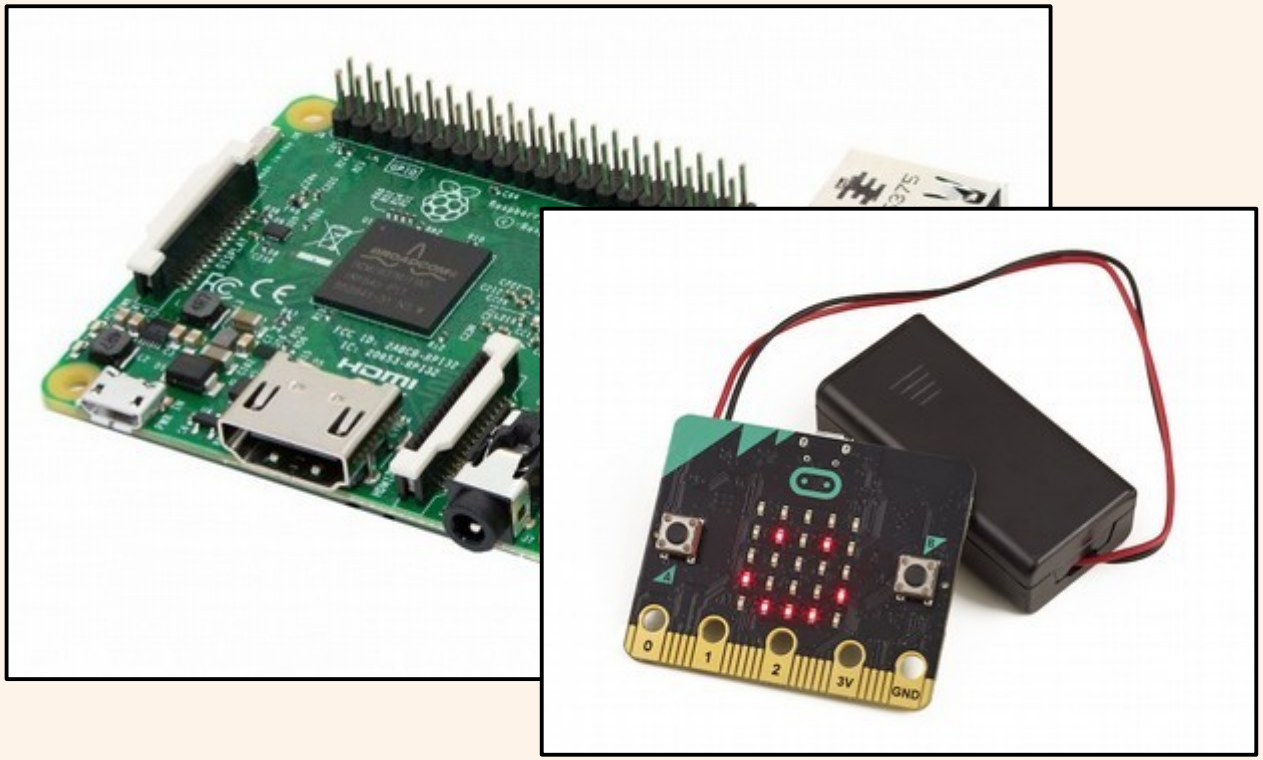
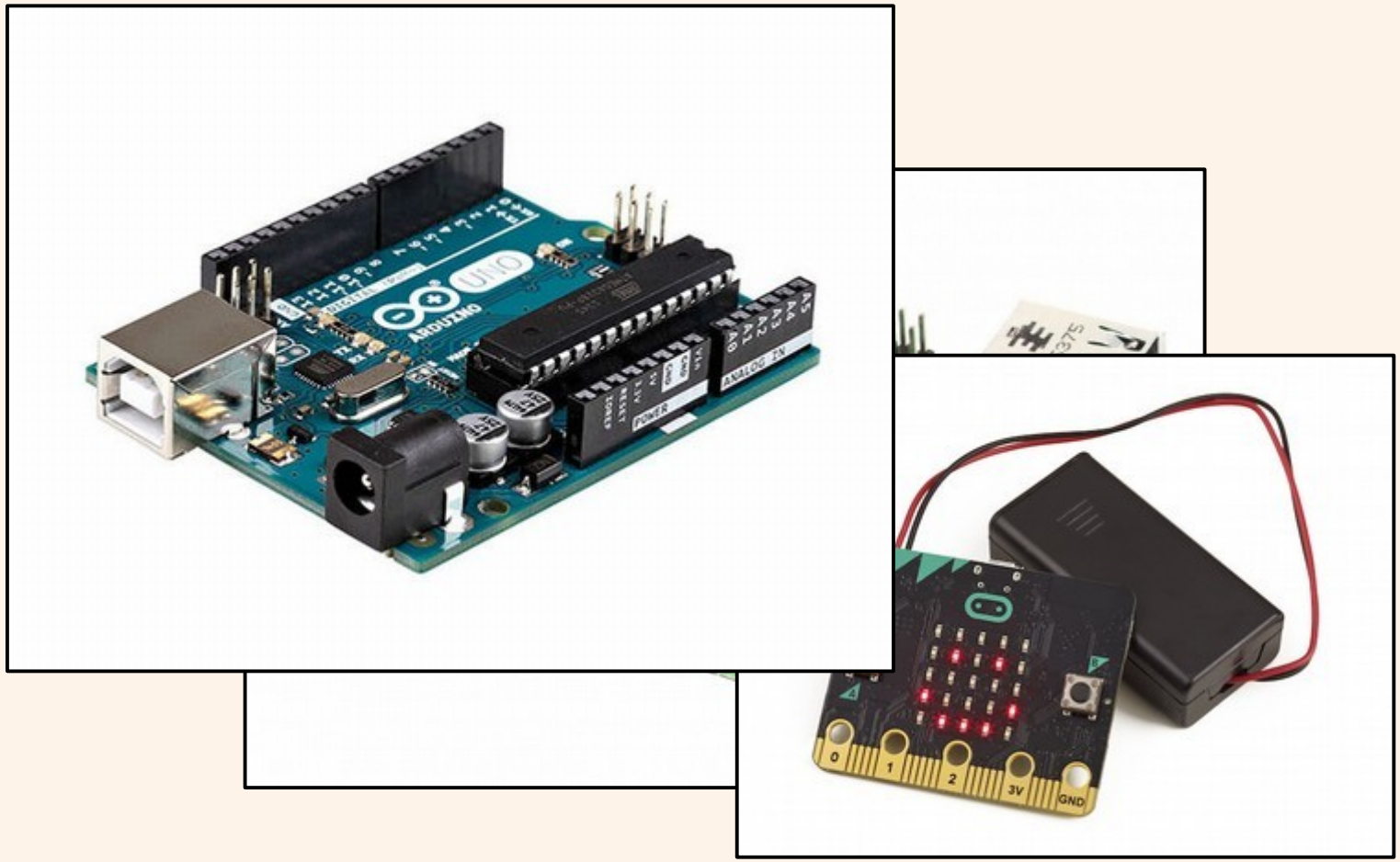


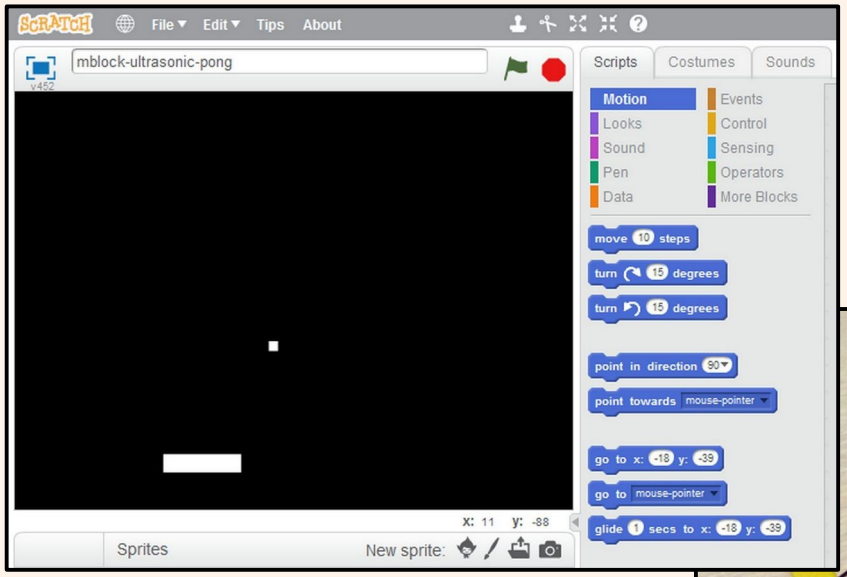
BBC Micro:Bit (2016)

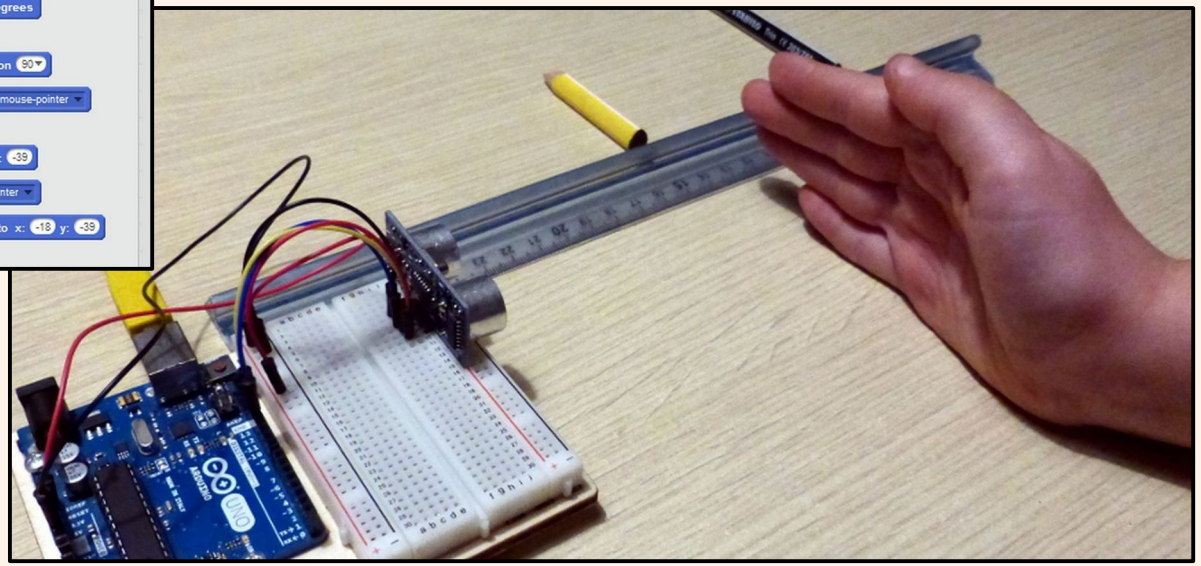
2020



Arduino (2005)

2020





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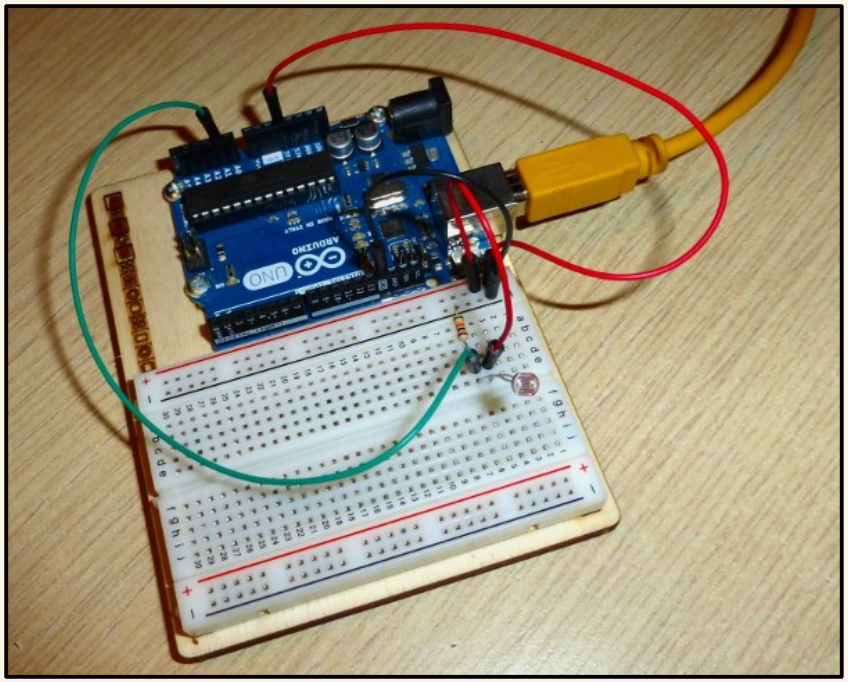

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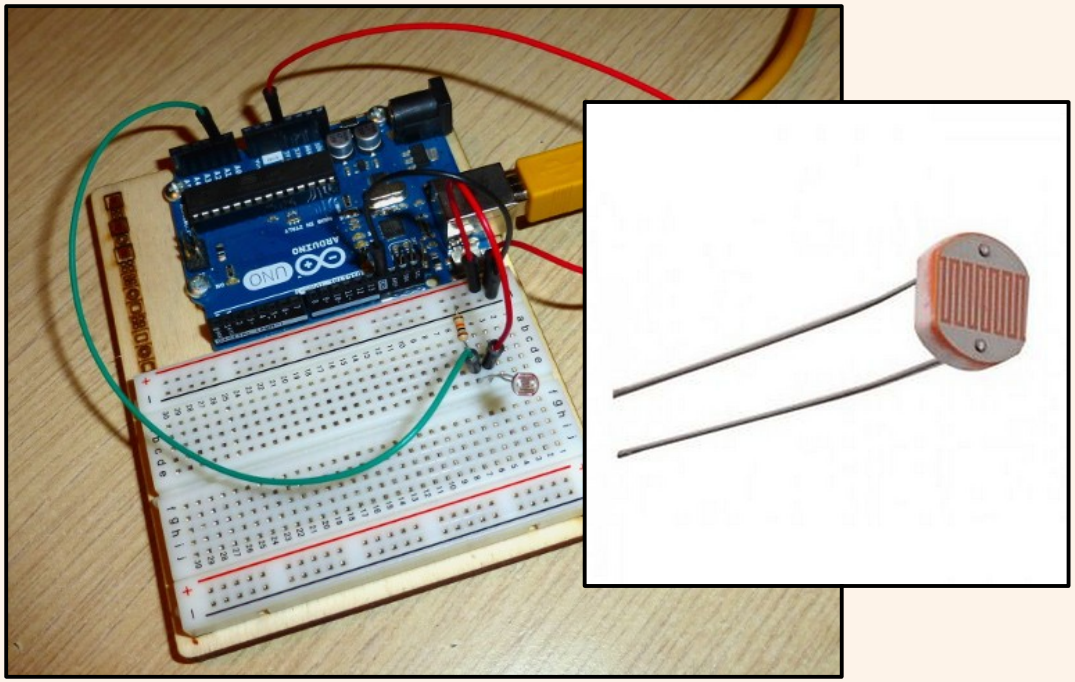

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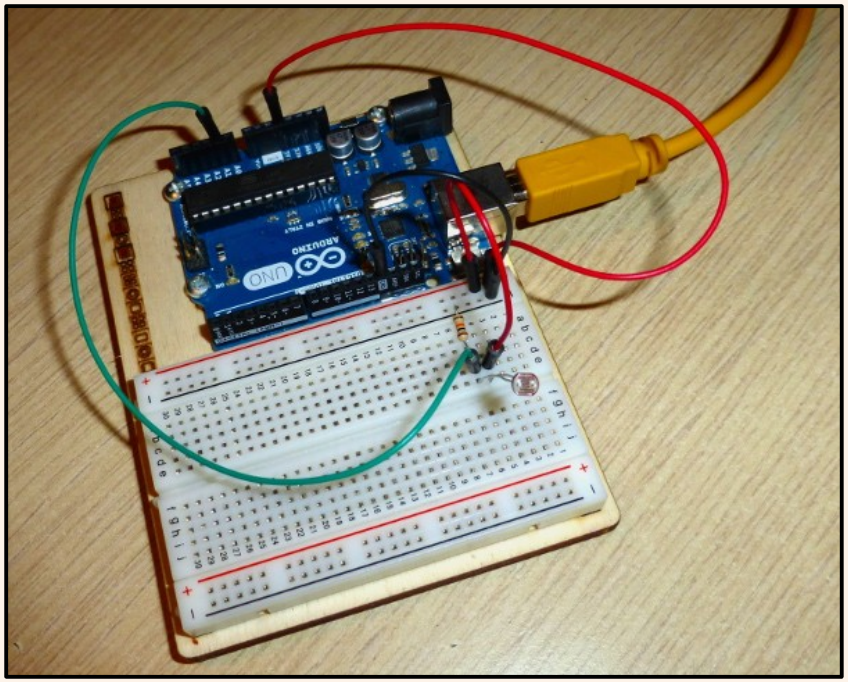

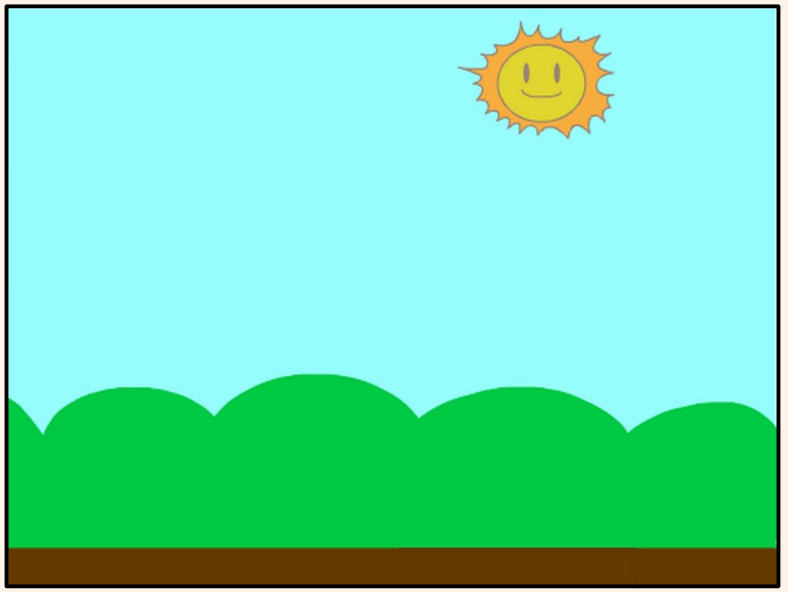

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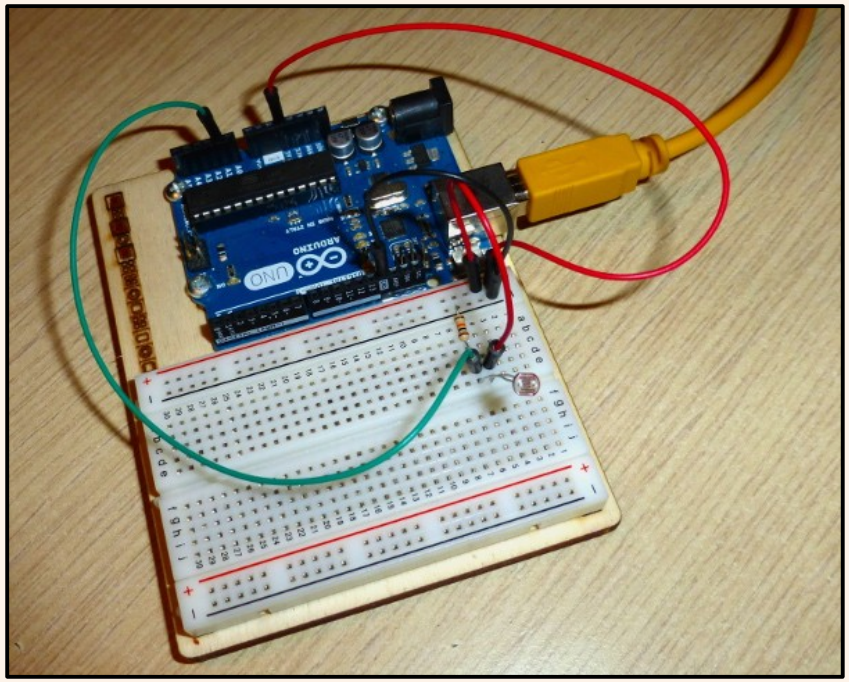

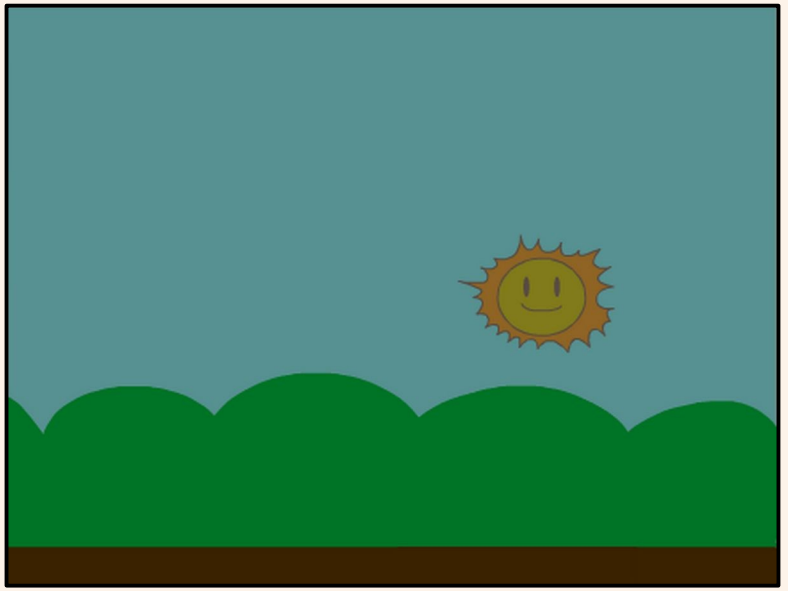

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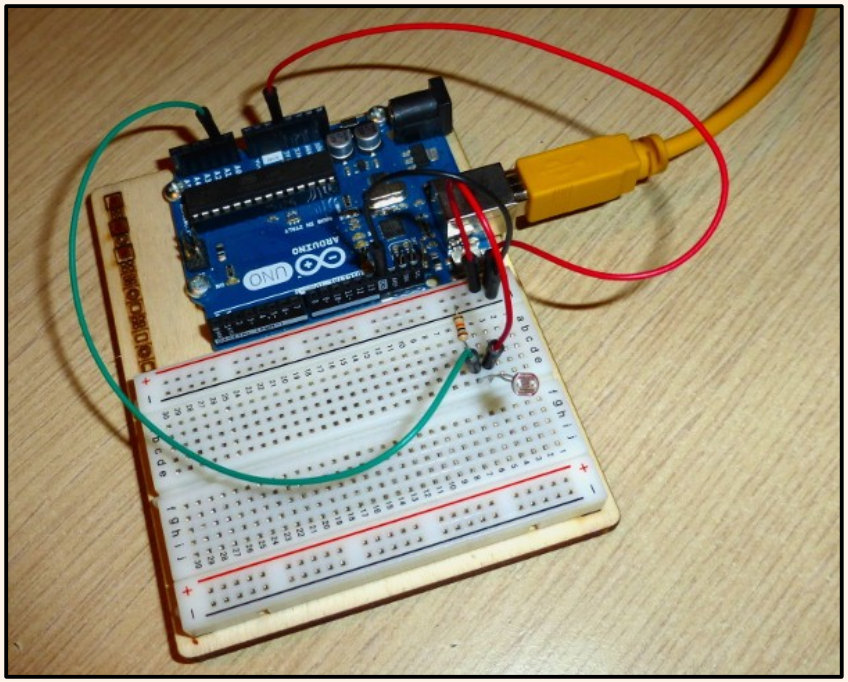

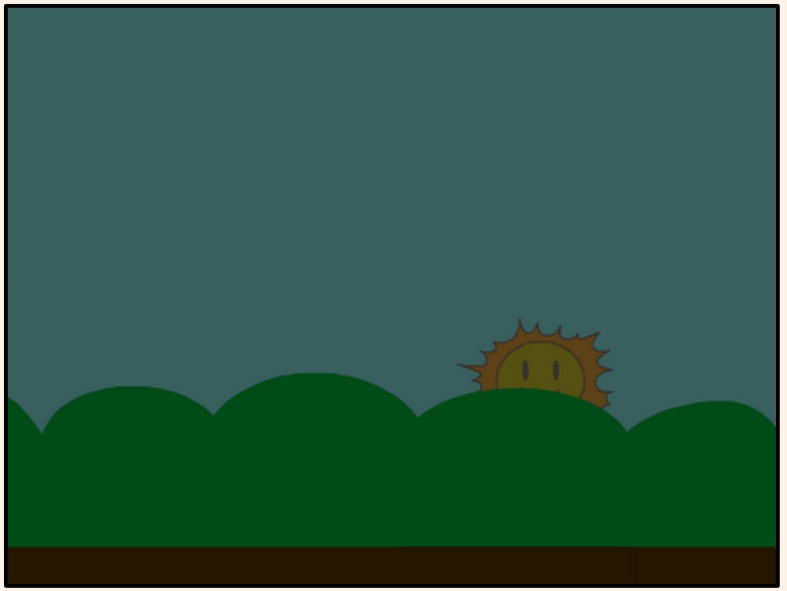

Arduino (2005)

ARCHITETTURA

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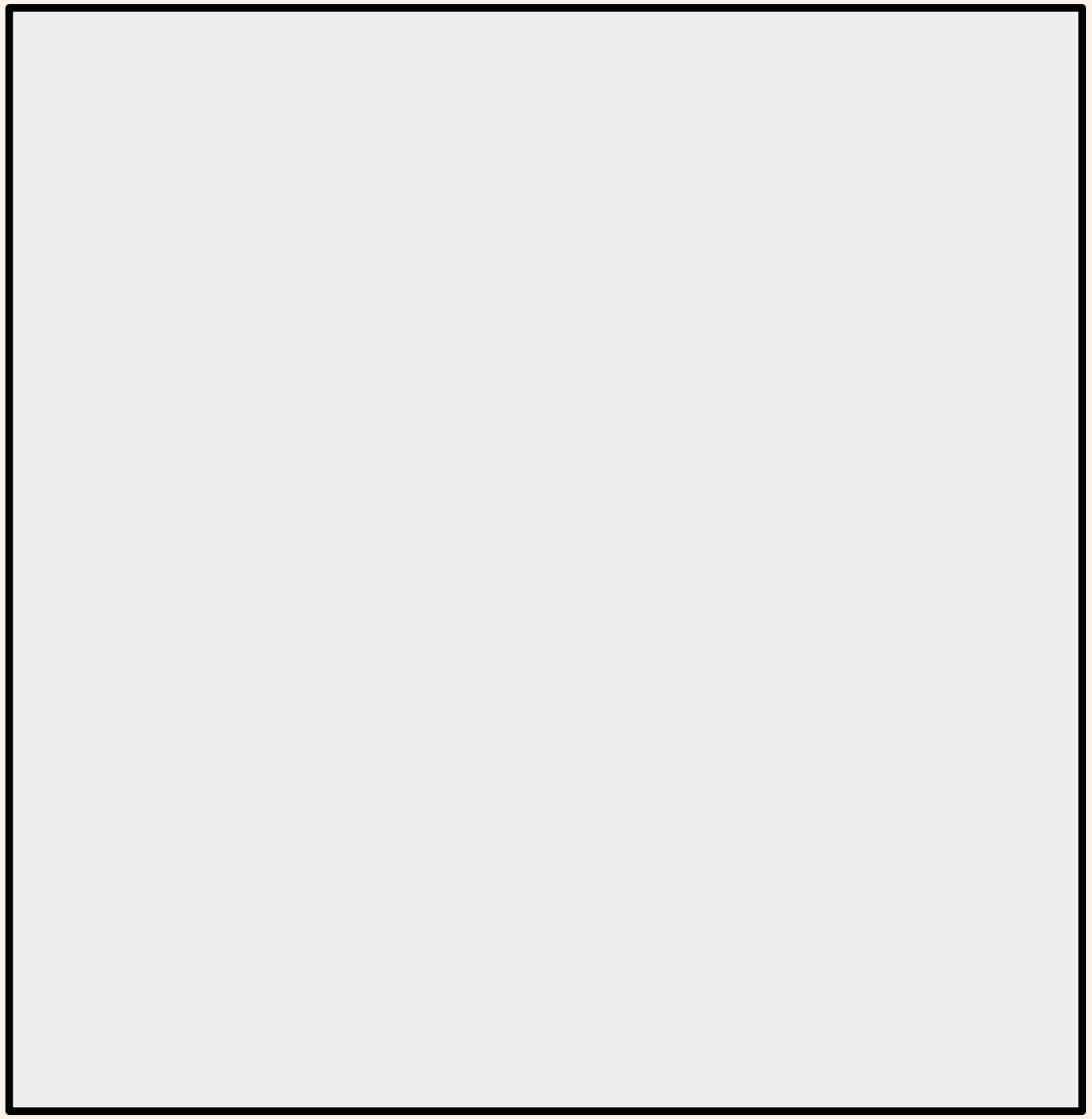

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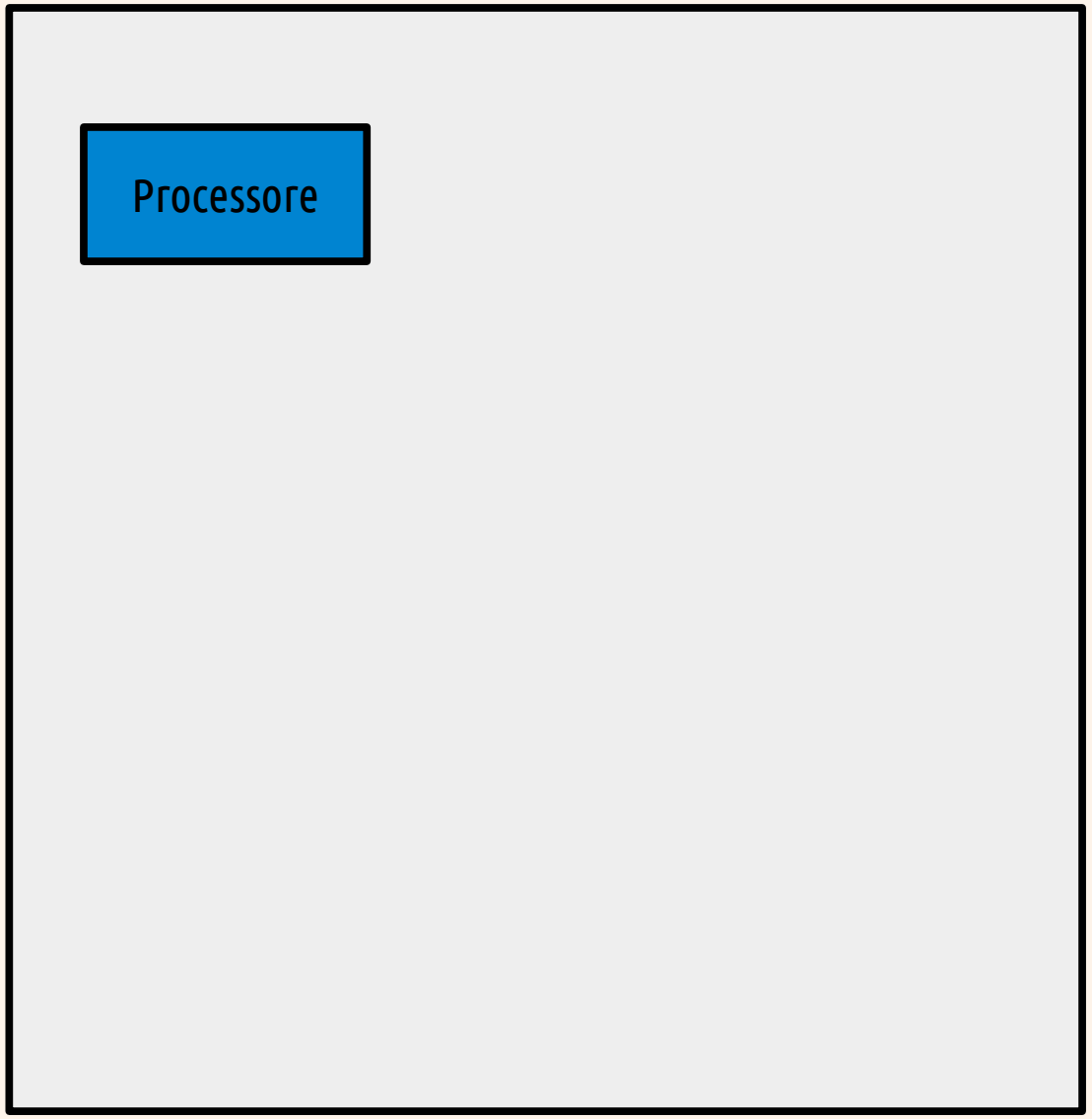

PROCESSORE

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Detto anche **CPU** – Central Processing Unit.

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Si occupa dell’esecuzione dei programmi
Effettua i calcoli logici e aritmetici.

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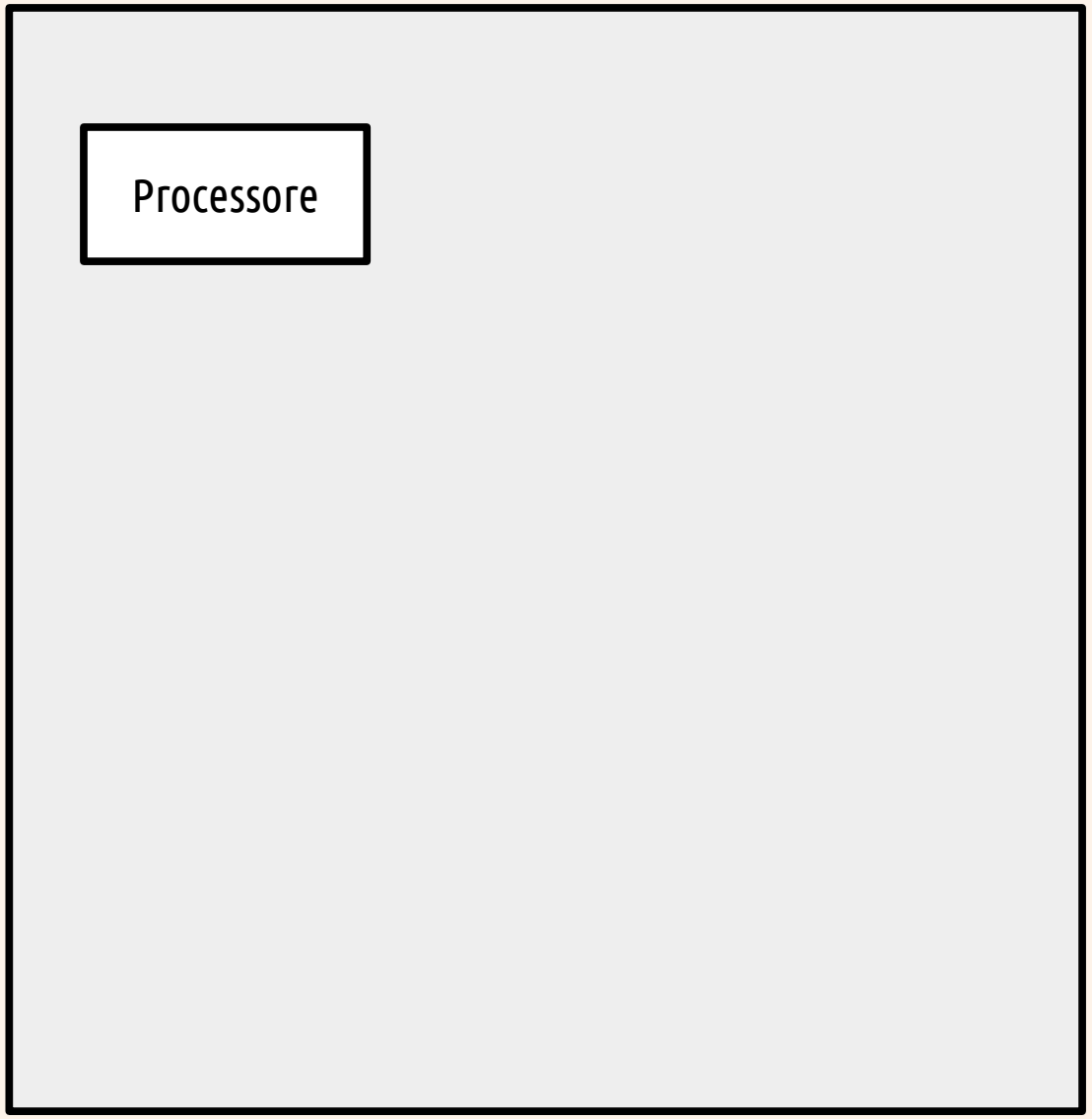
Effettua i calcoli logici e aritmetici.

Sovrintende il funzionamento di tutti gli altri componenti del calcolatore.

PROCESSORE

ARCHITETTURA



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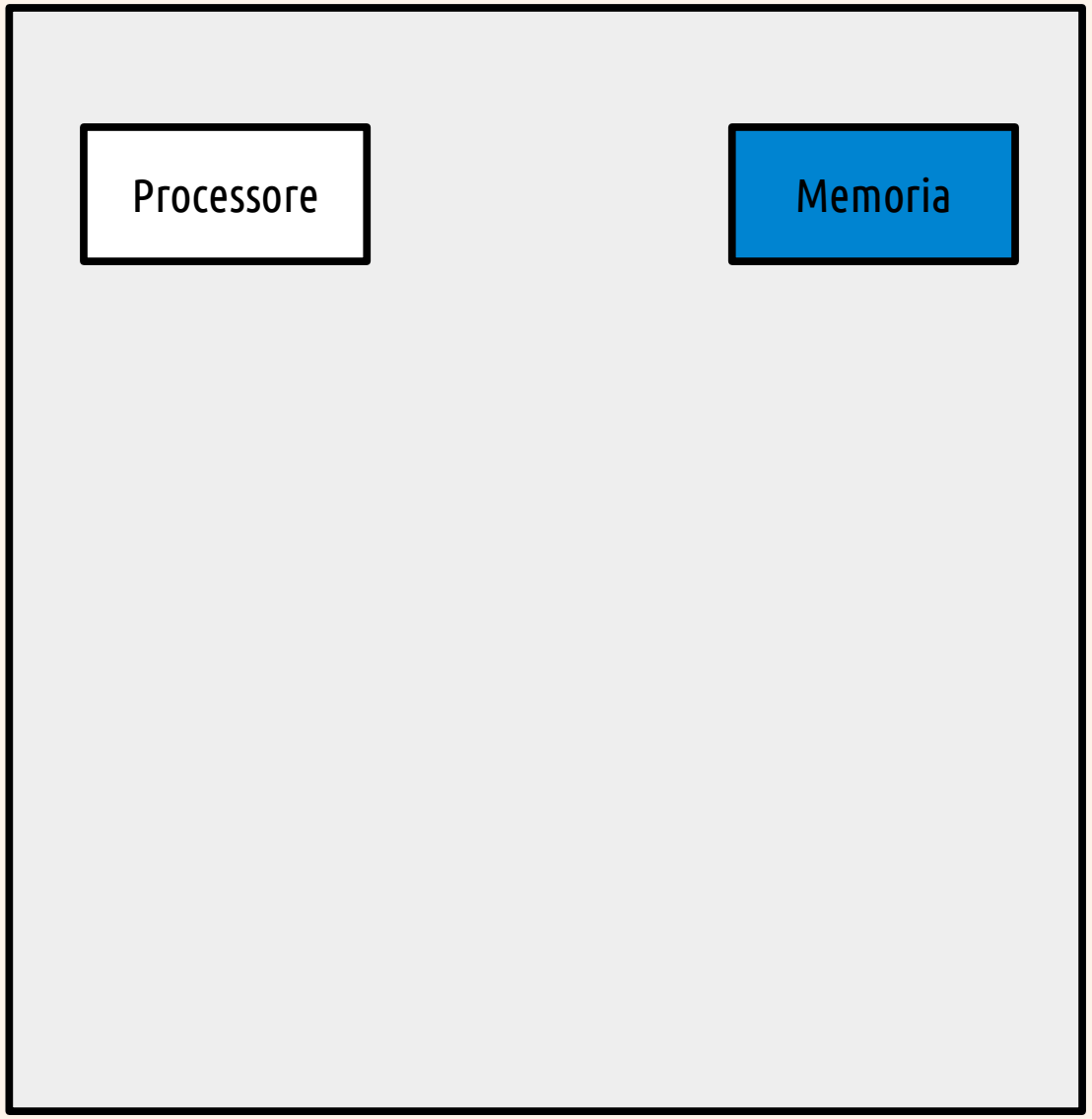

MEMORIA

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Contiene le istruzioni che costituiscono
i programmi da eseguire e i dati da elaborare.

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Accesso ultra-veloce.

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Accesso ultra-veloce.

Disponibile in quantità limitata.

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Contiene le istruzioni che costituiscono
i programmi da eseguire e i dati da elaborare.

Accesso ultra-veloce.

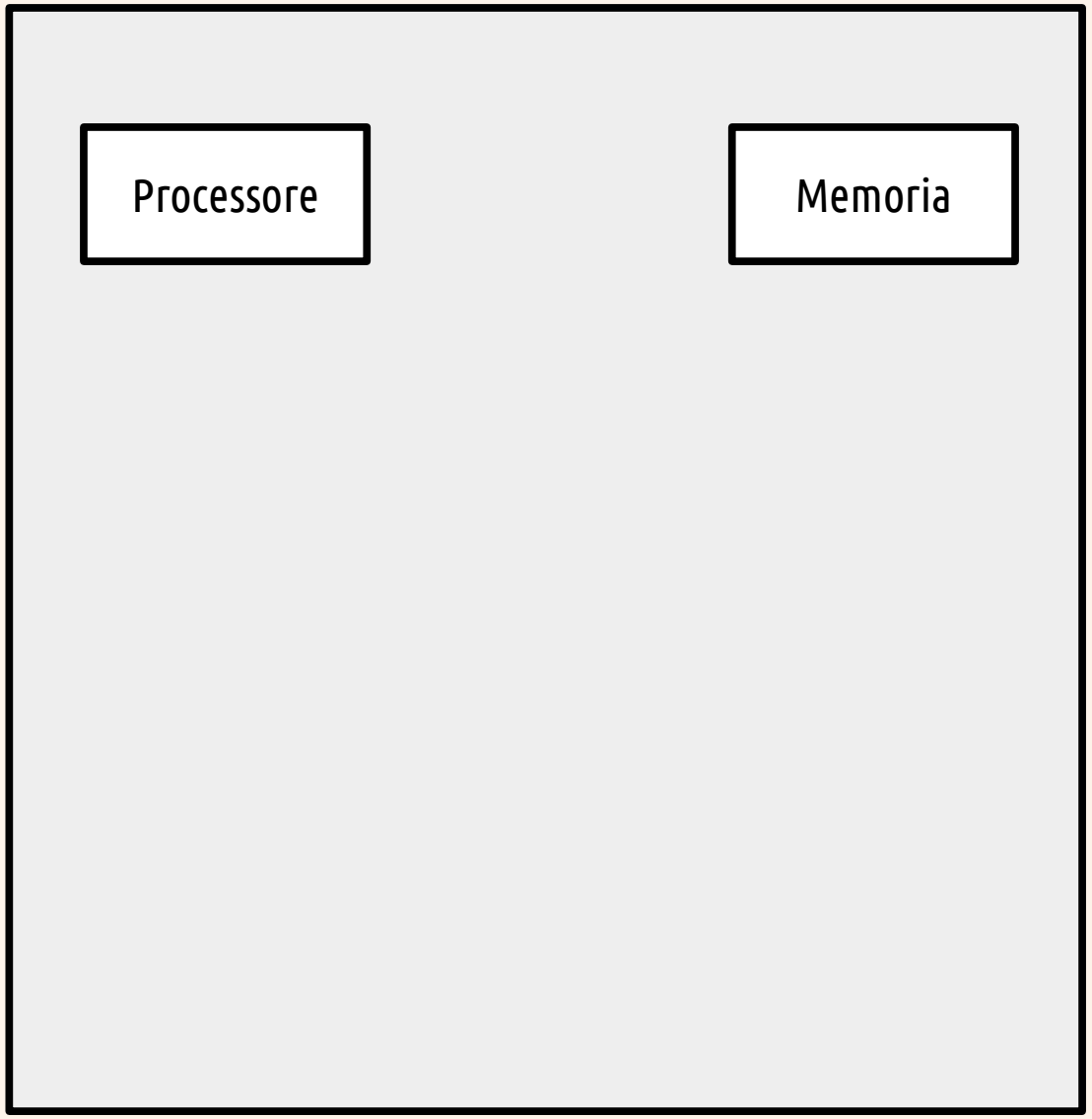
Disponibile in quantità limitata.

Perde il contenuto quando si spegne il calcolatore.

MEMORIA


A-TECH
6521 AA 55414 L/H445/V
179 88000
A-TECH
6521 AA 55414 L/H445/V
179 88000

ARCHITETTURA



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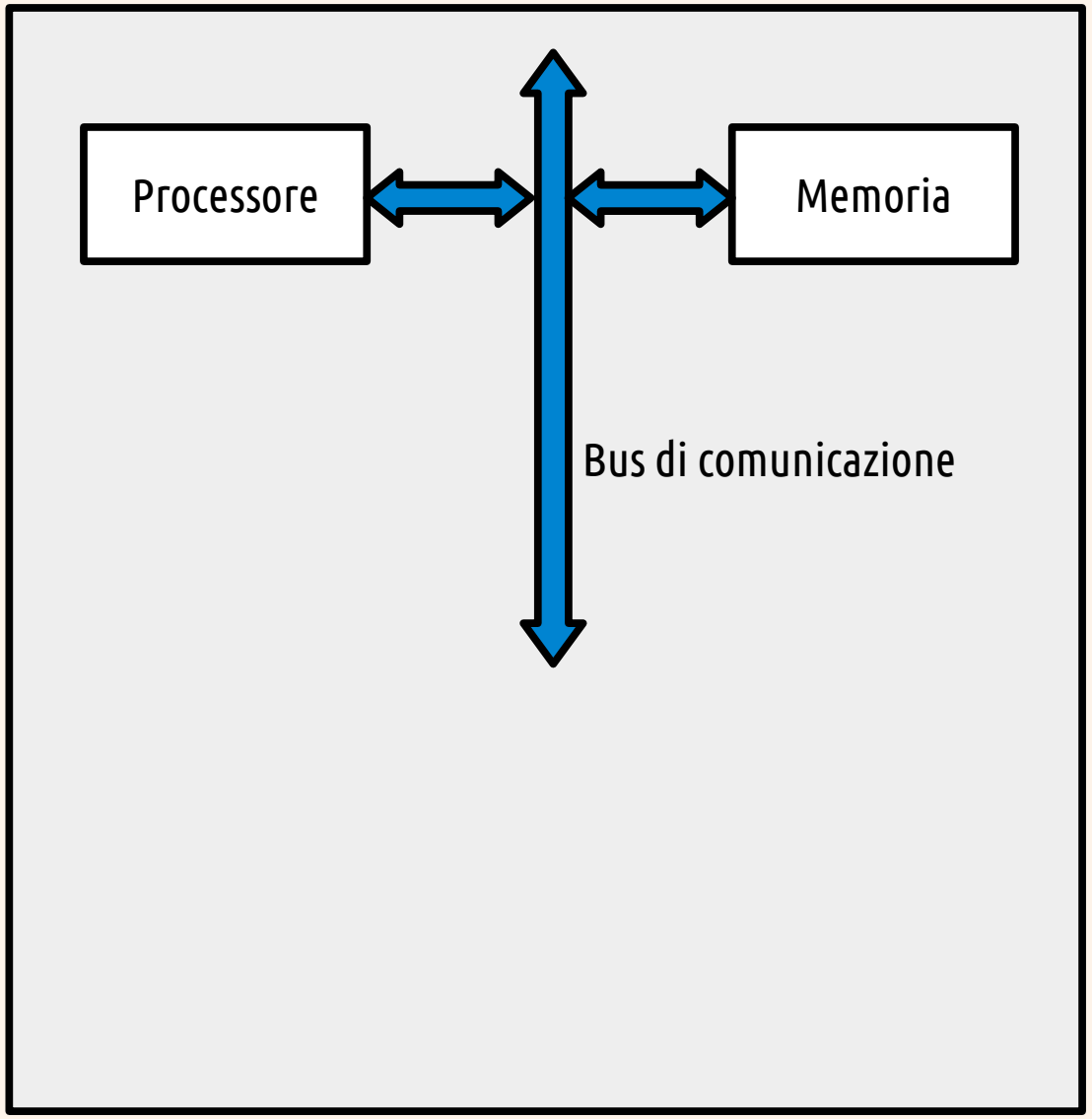

SCHEDA MADRE

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Ospita i componenti principali.

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Fornisce l’infrastruttura di comunicazione.

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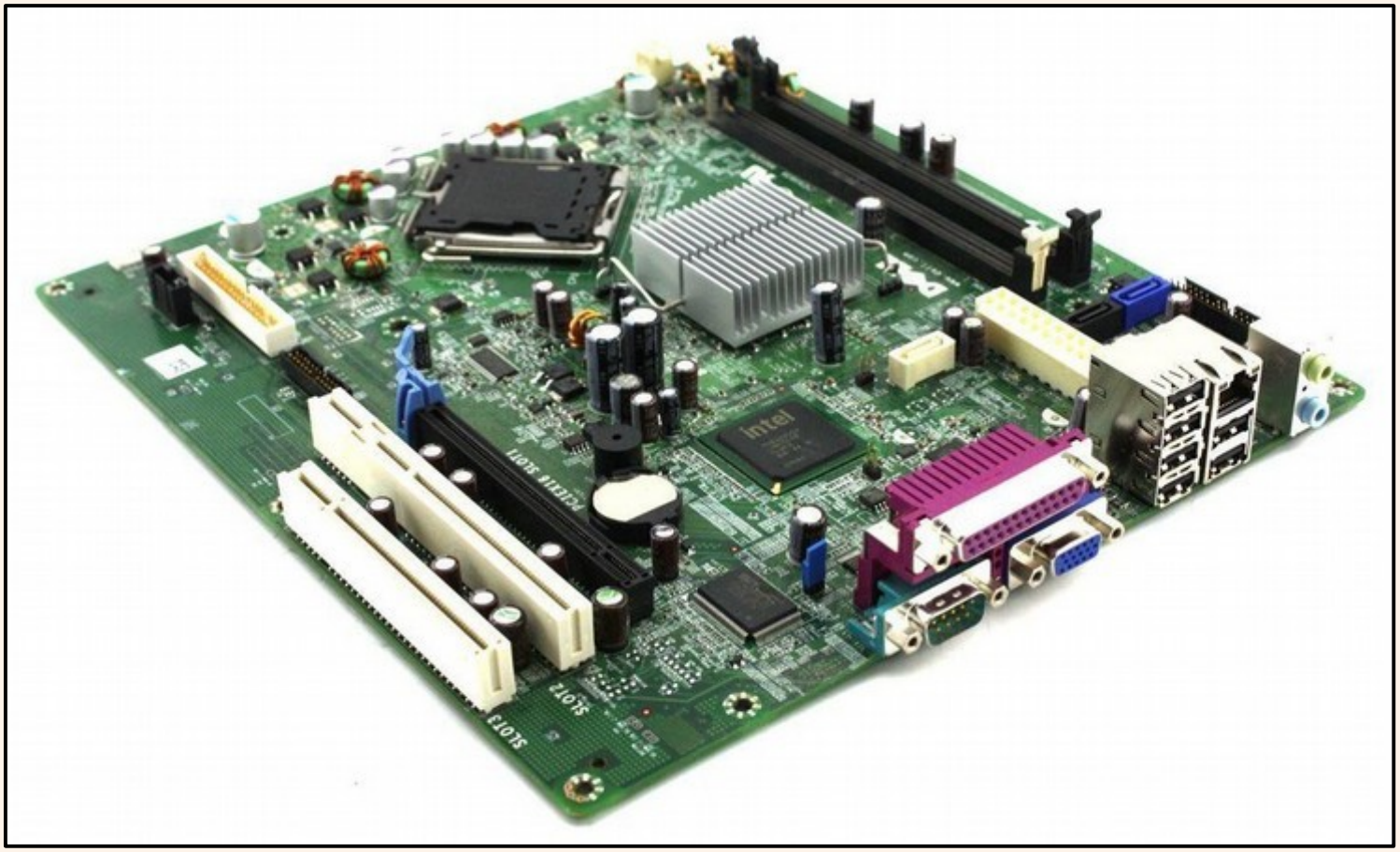
Ospita i componenti principali.

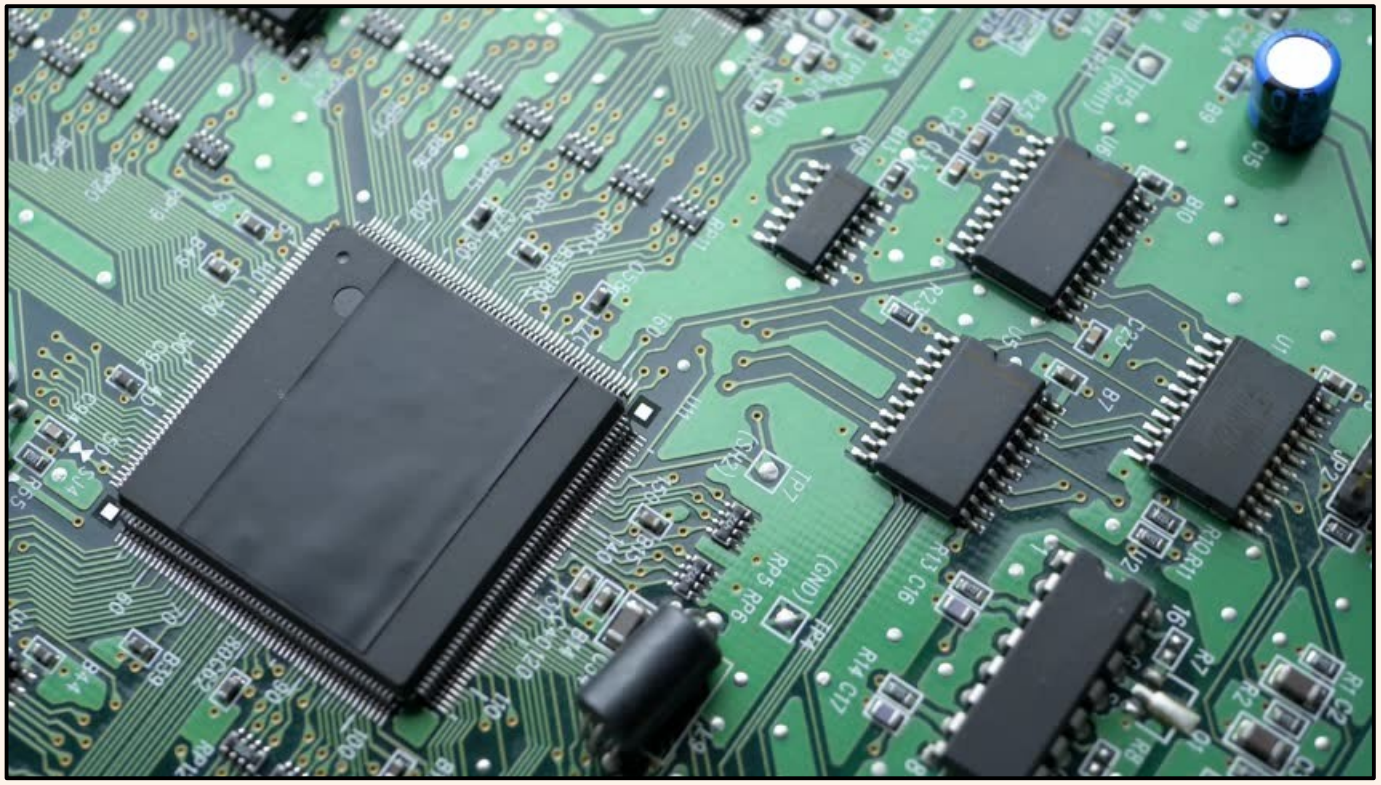
Fornisce l’infrastruttura di comunicazione.

Offre punti di espansione del sistema.

SCHEDA MADRE



BUS



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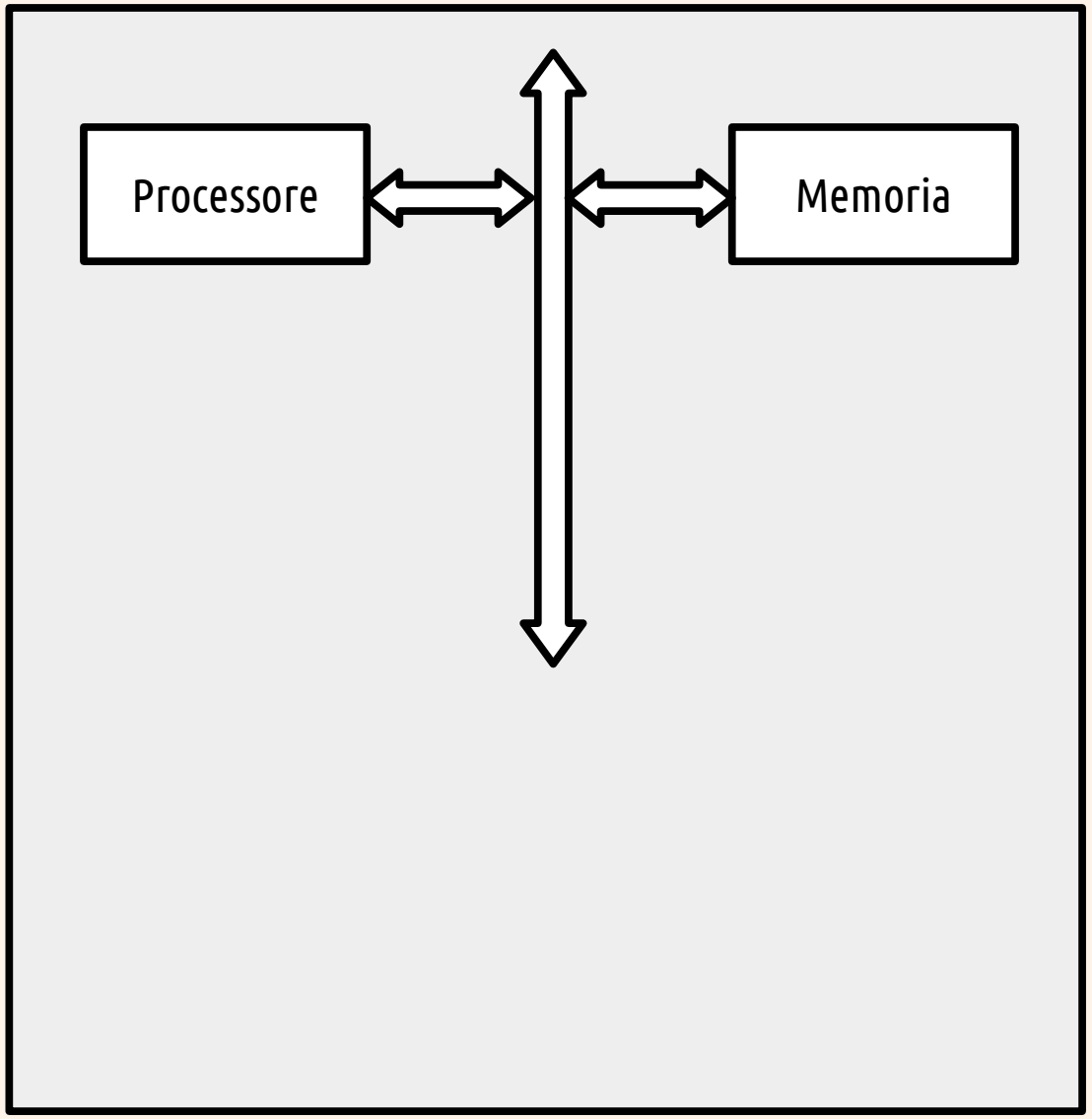

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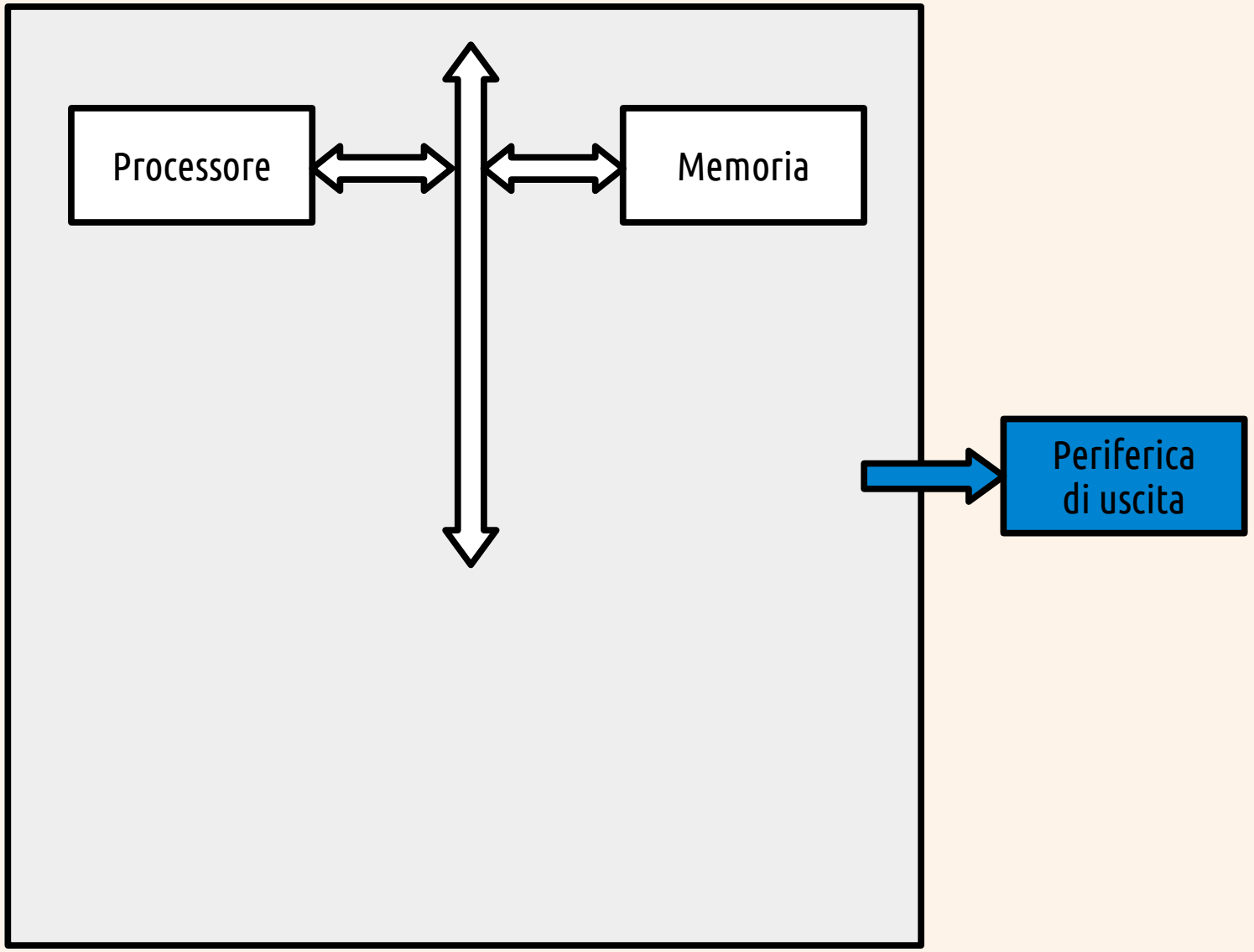
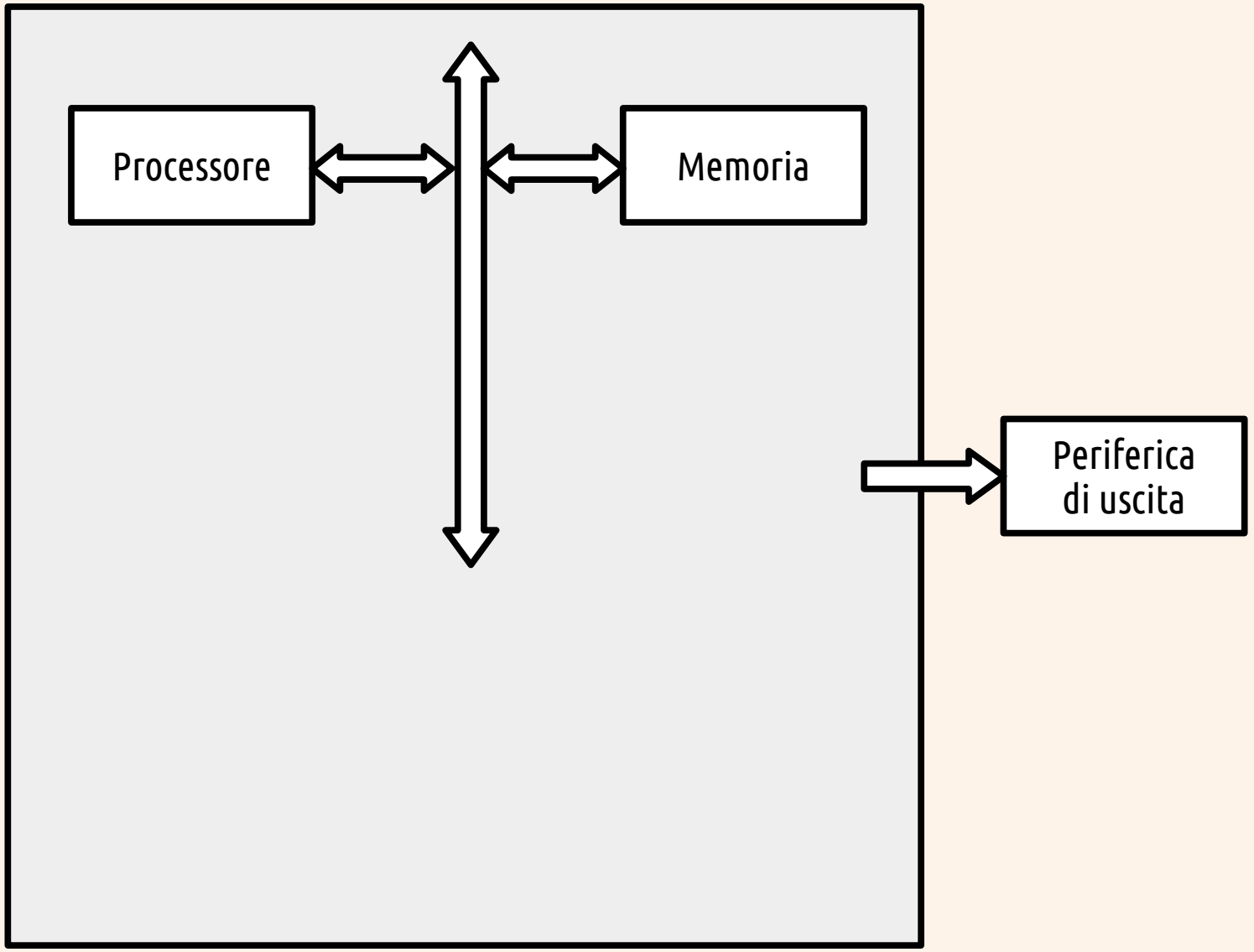


PERIFERICA D'USCITA

Apparato per la **ricezione**
di dati dall'unità centrale

PERIFERICA D'USCITA

ARCHITETTURA



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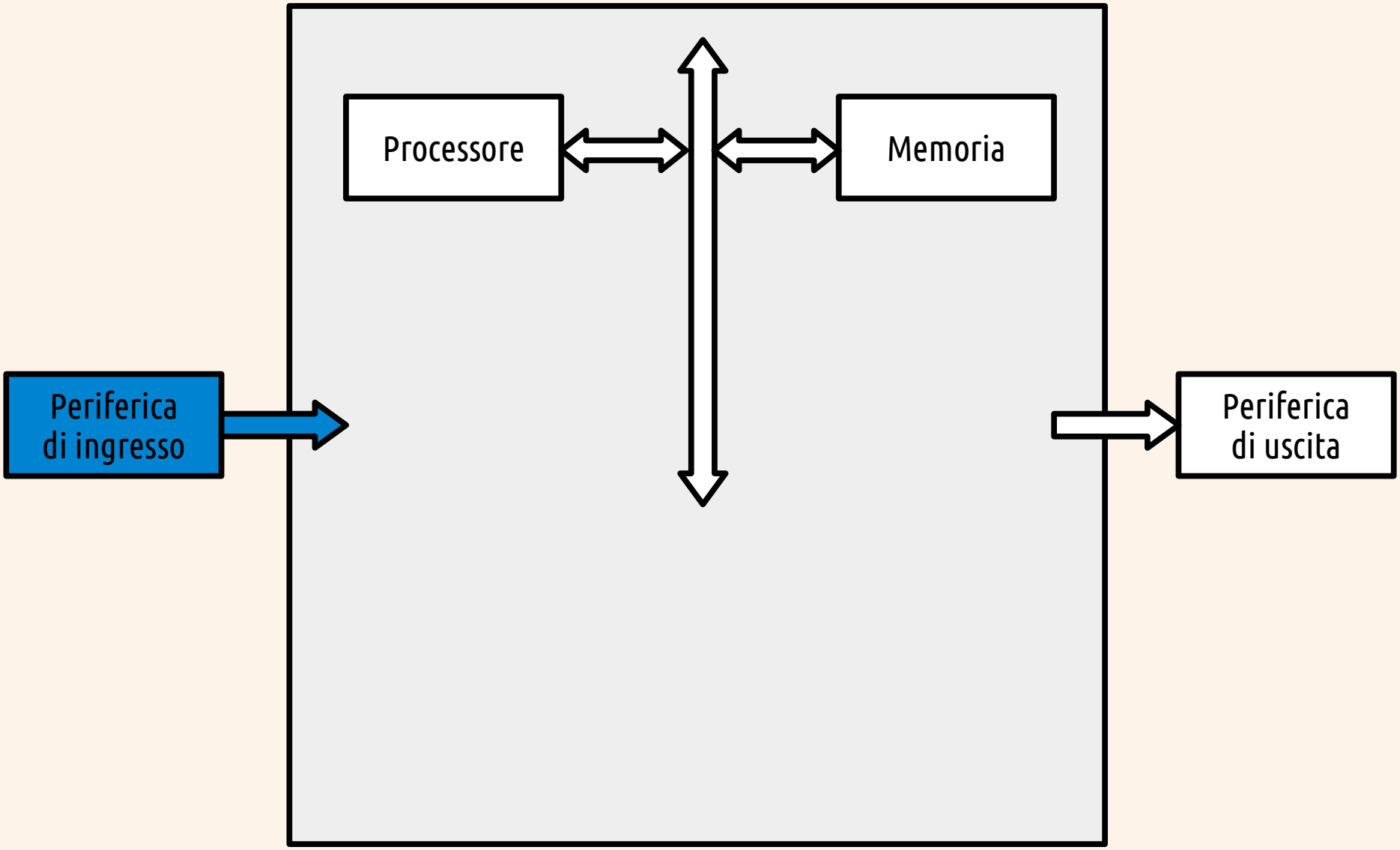
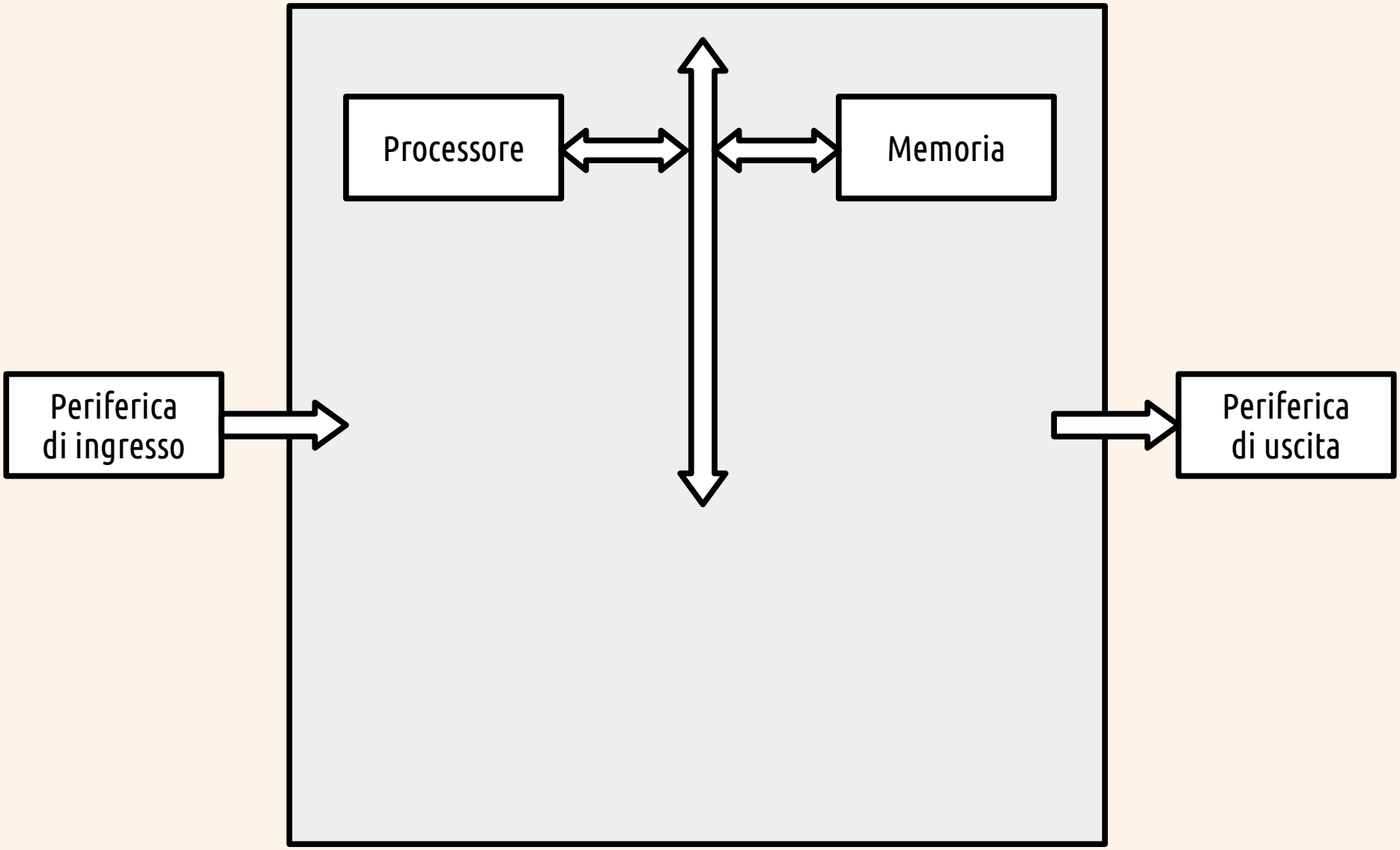


PERIFERICA D'INGRESSO

Apparato per l'**invio**
di dati all'unità centrale

PERIFERICA D'INGRESSO

ARCHITETTURA



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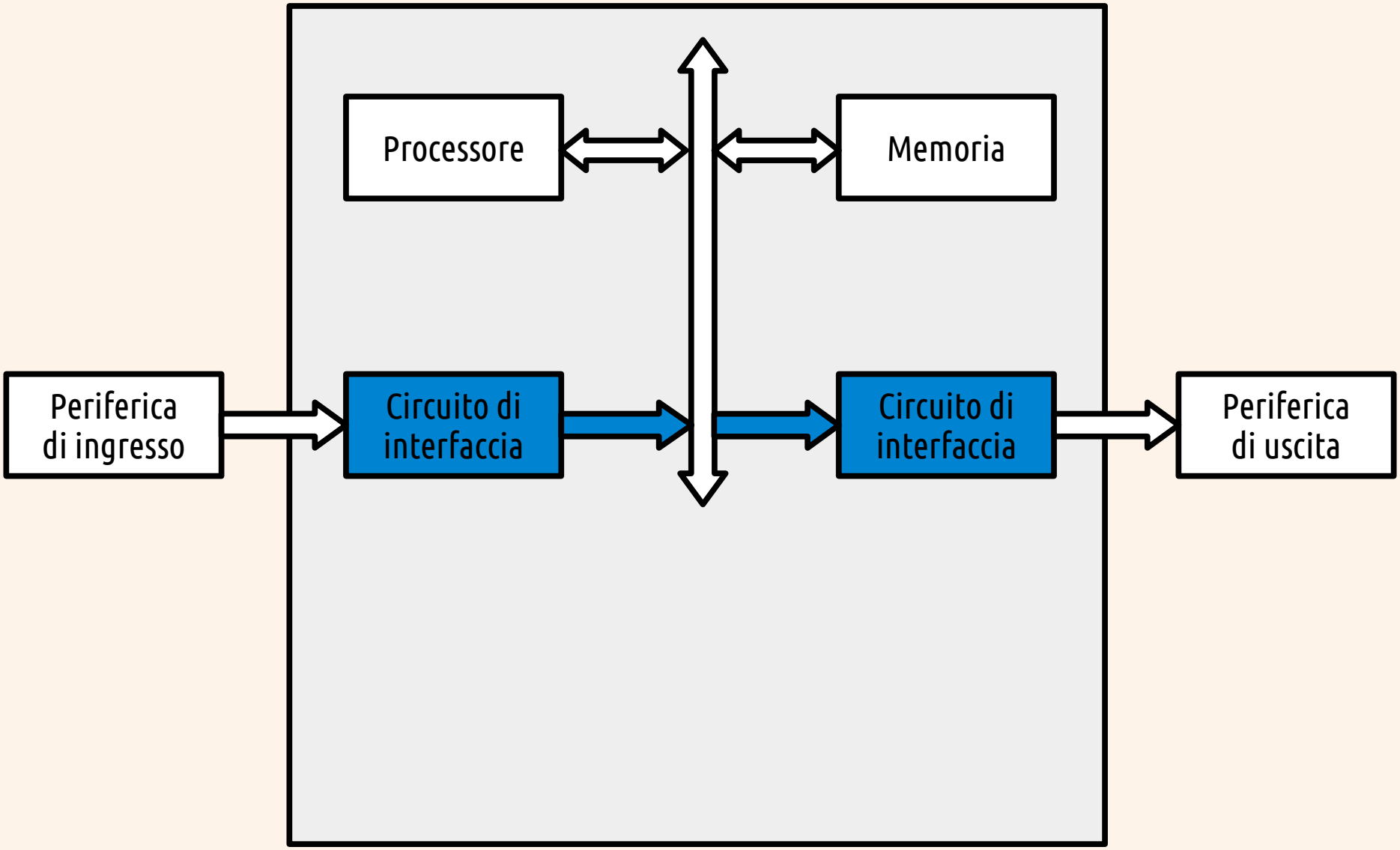

CIRCUITO DI INTERFACCIA

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Detto anche **controller**.

CIRCUITO DI INTERFACCIA

Detto anche **controller**.

Consente il colloquio tra CPU e periferica
Standard di riferimento: USB, HDMI, SATA, …

CIRCUITO DI INTERFACCIA

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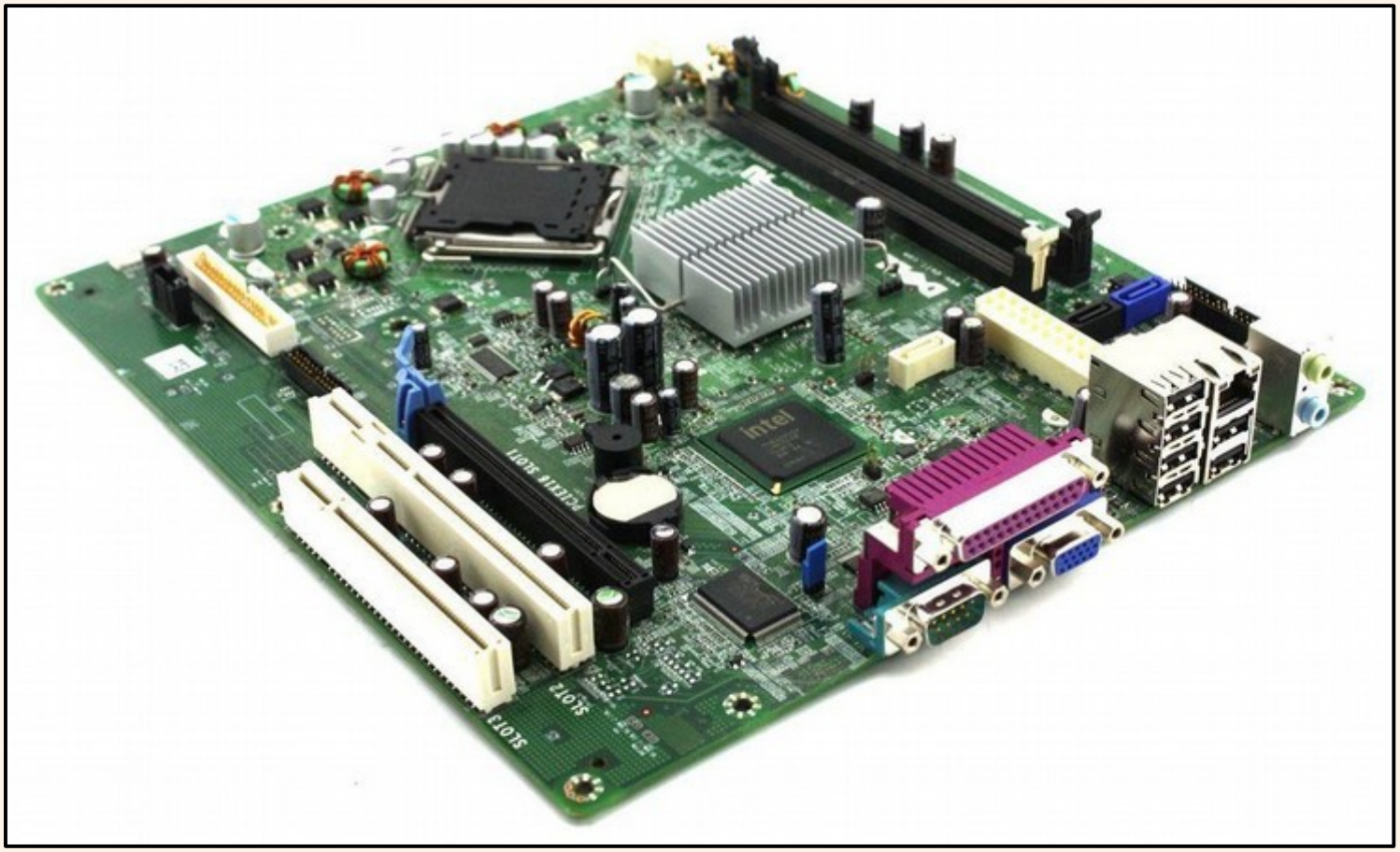
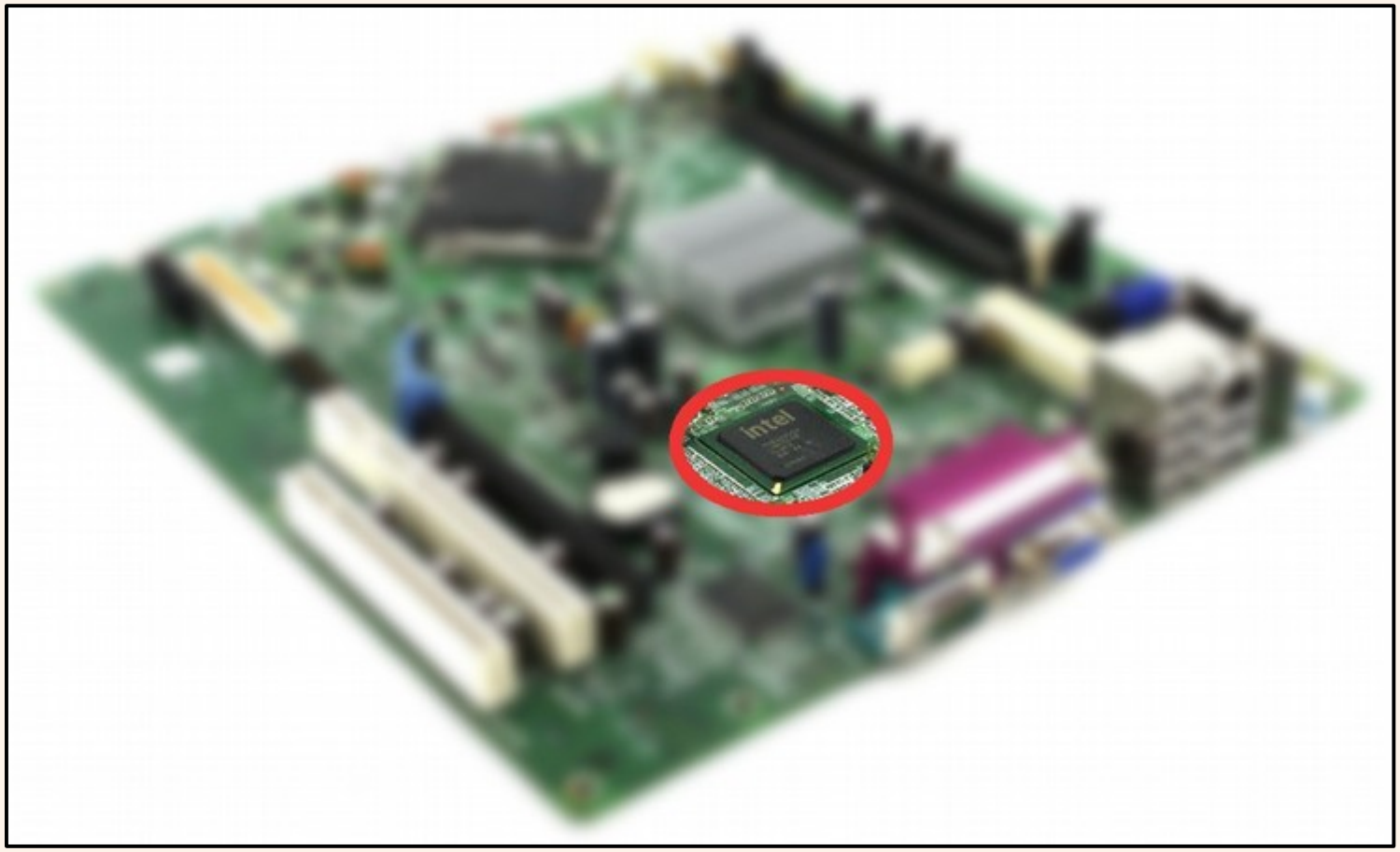


CIRCUITO DI INTERFACCIA



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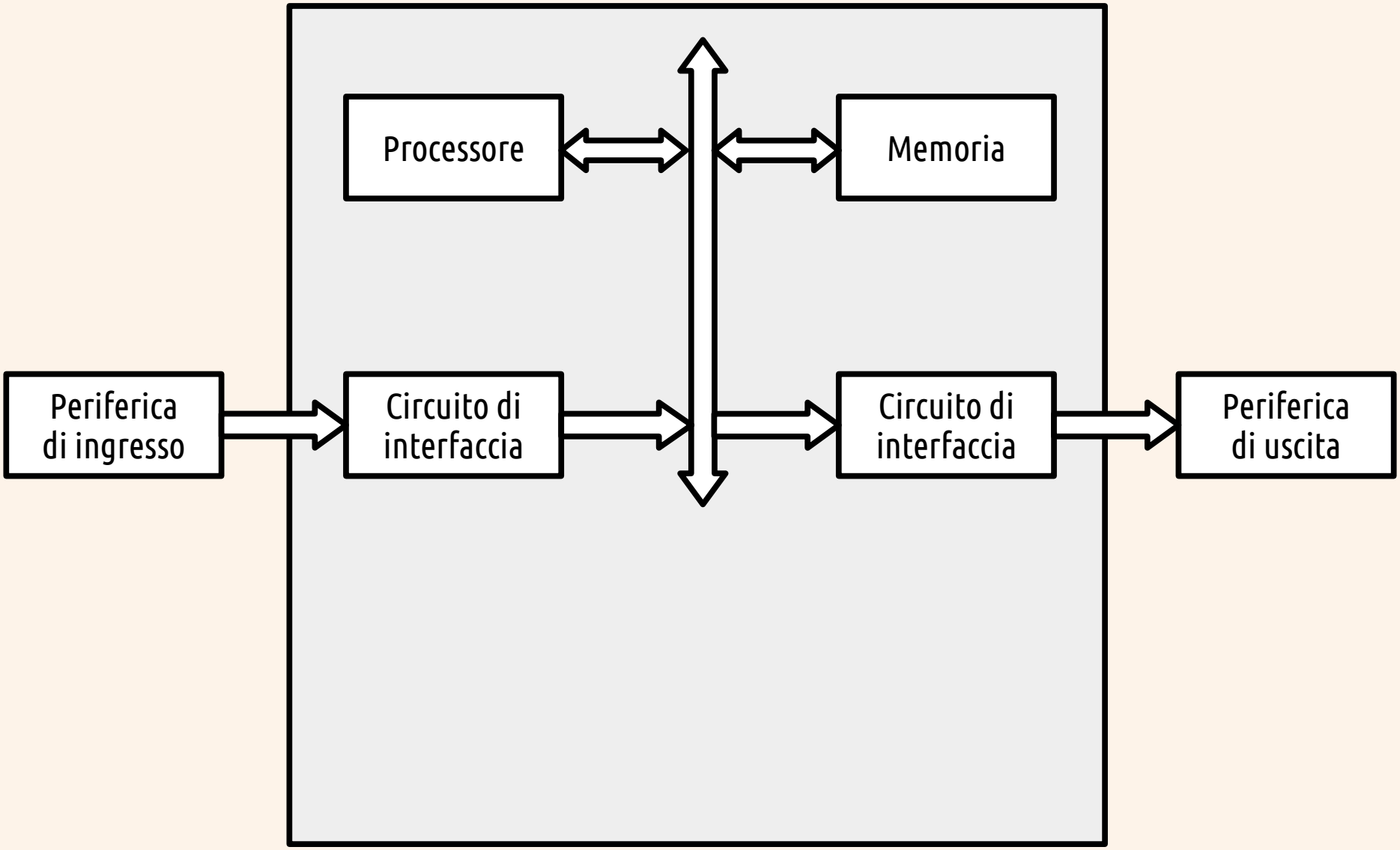

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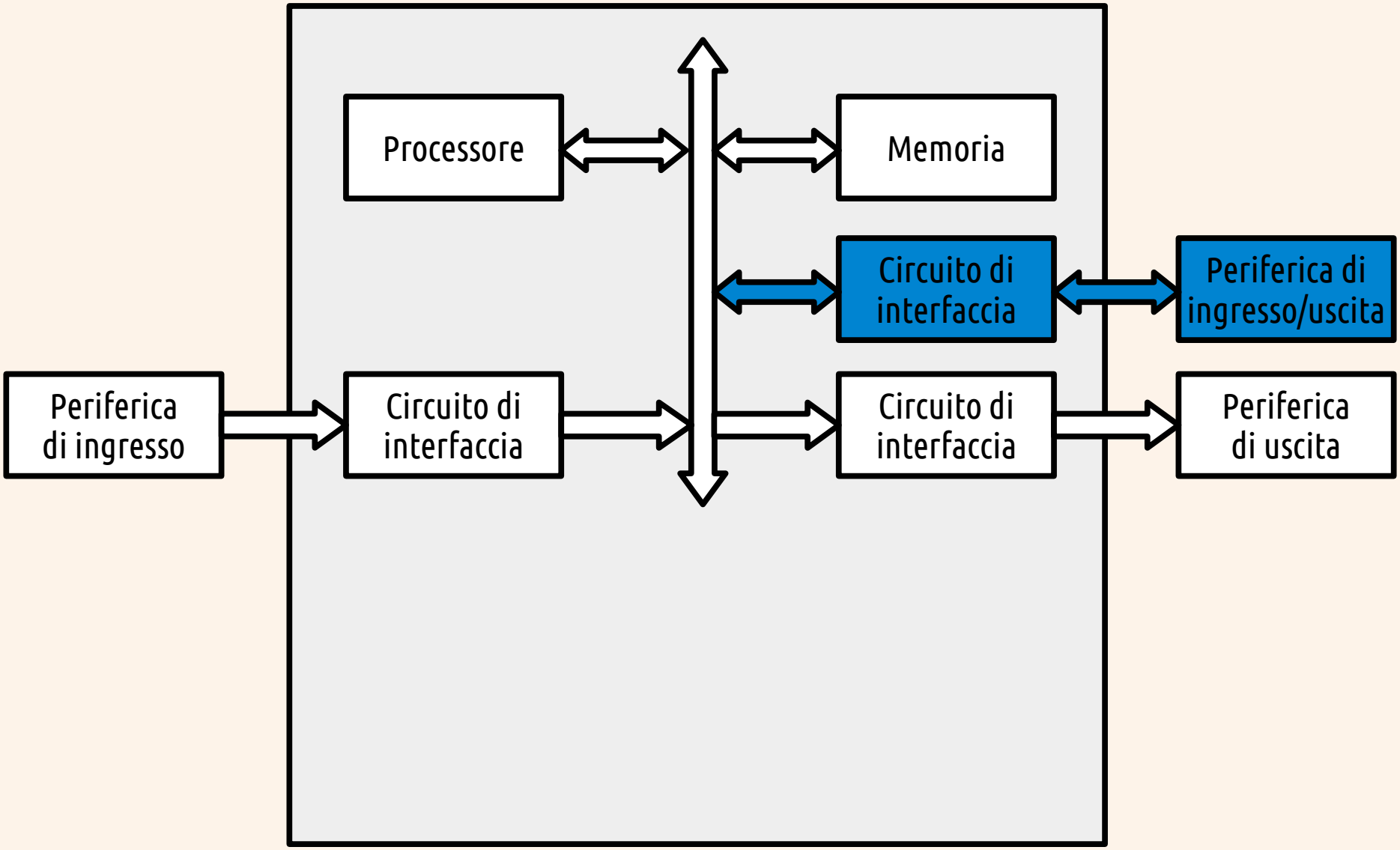

ALTRE PERIFERICHE

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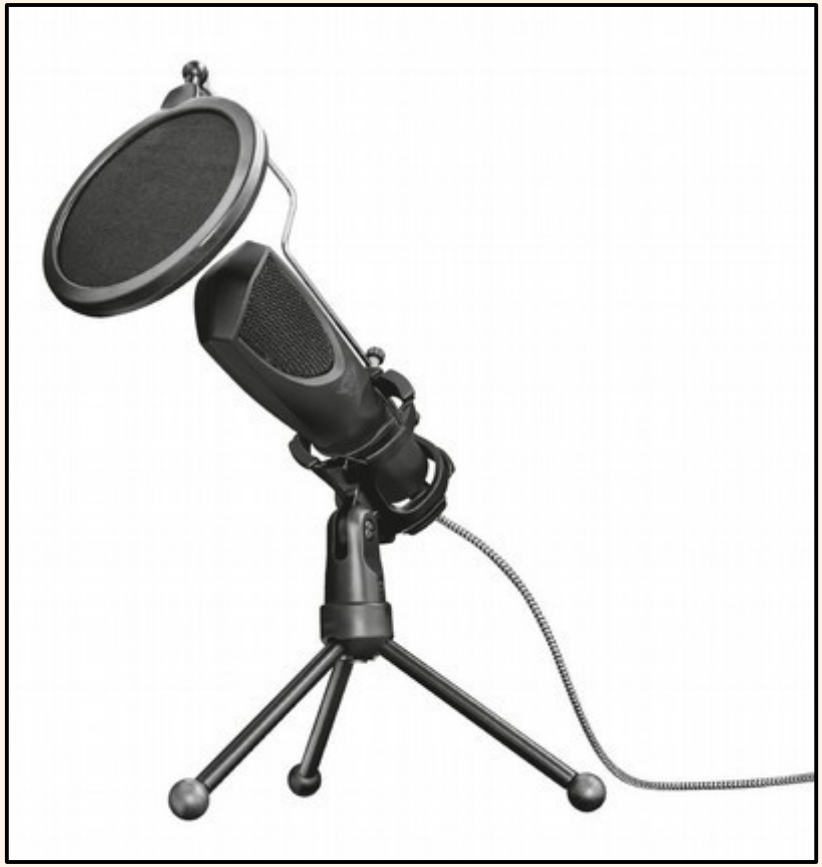

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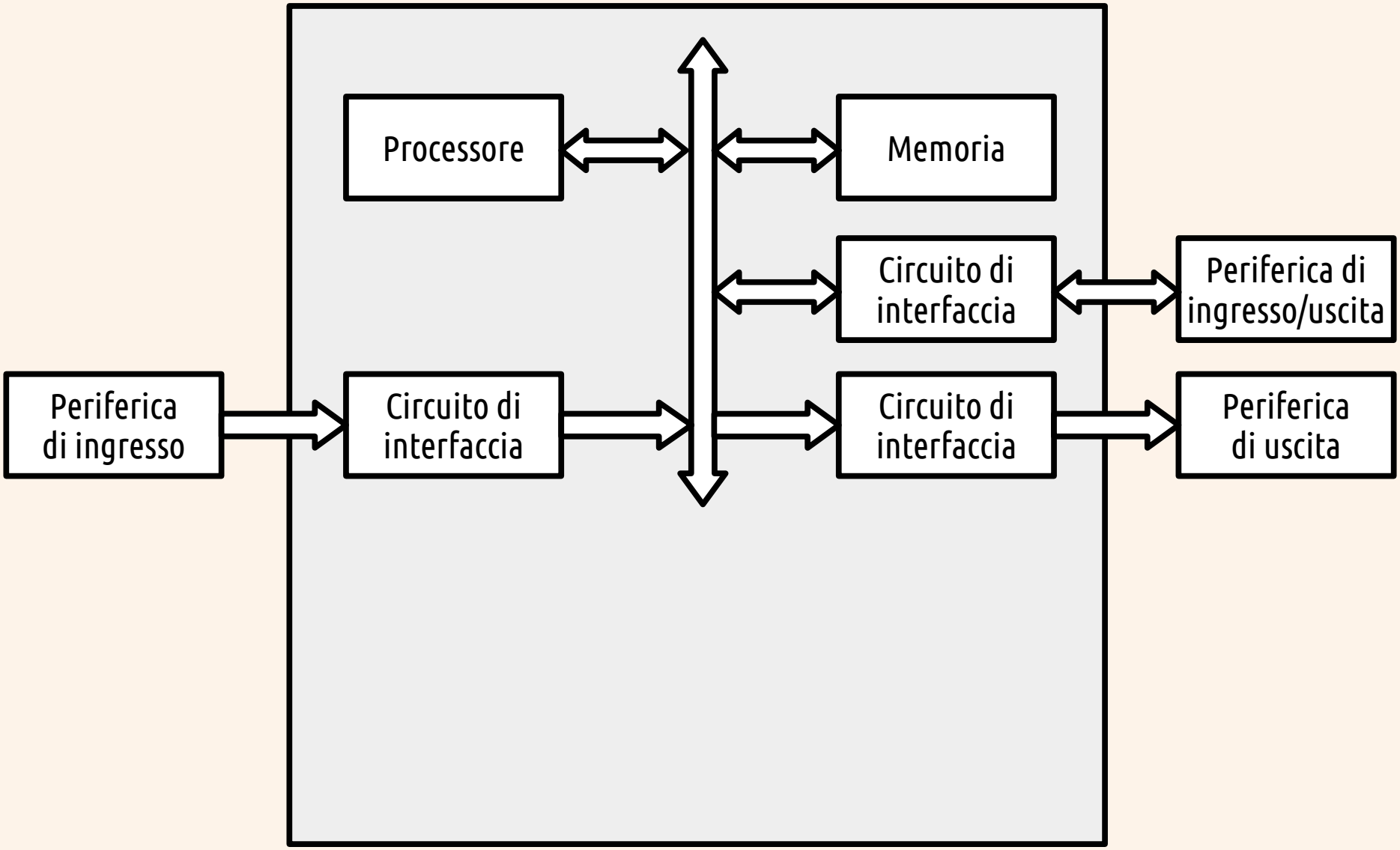

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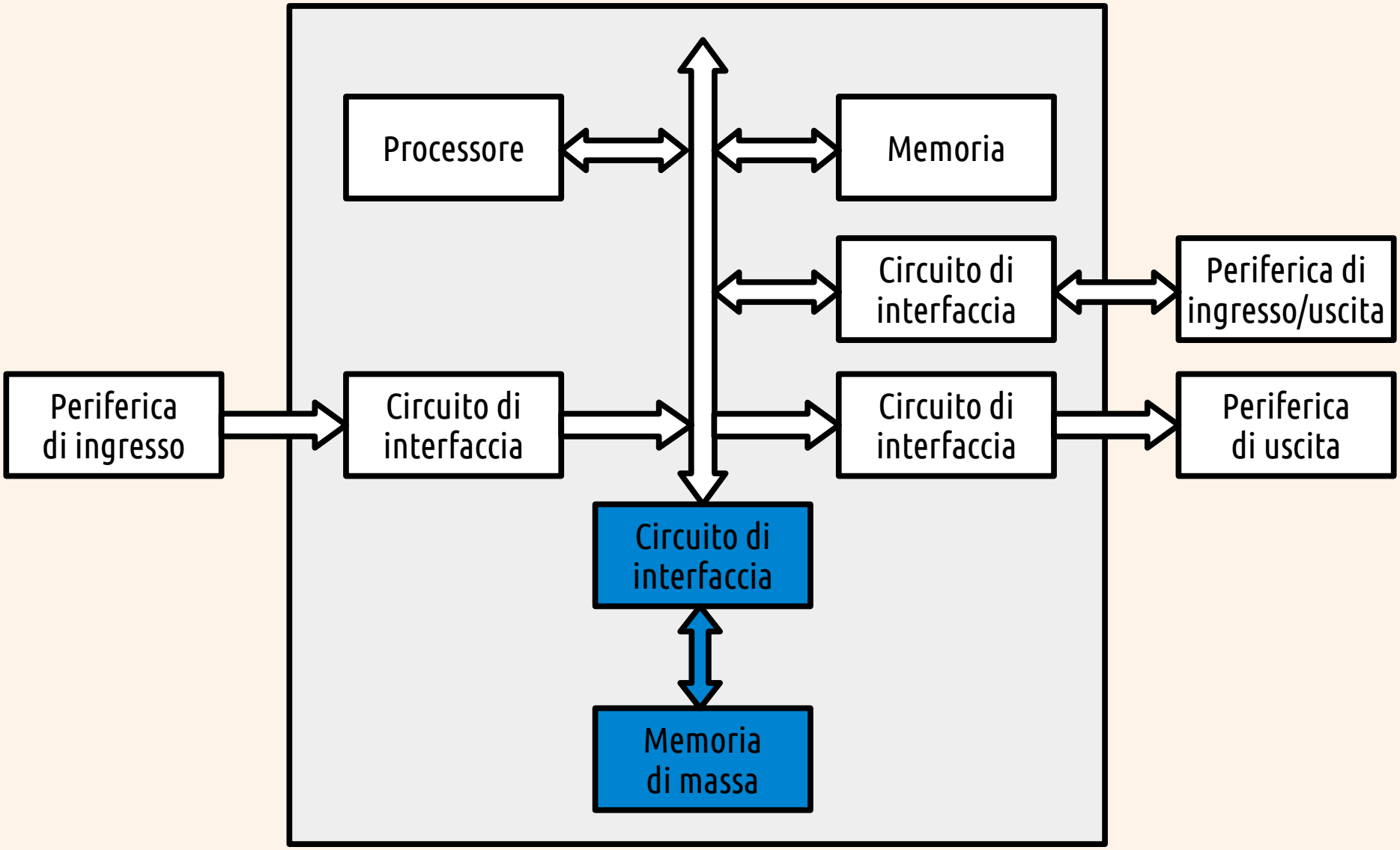

MEMORIA DI MASSA

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Mantiene i dati anche a calcolatore spento.

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Mantiene i dati anche a calcolatore spento.

Molto lenta rispetto alla memoria centrale.

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Molto lenta rispetto alla memoria centrale.

Disponibile in quantità praticamente illimitata.

MEMORIE DI MASSA

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ALTRI ACCESSORI

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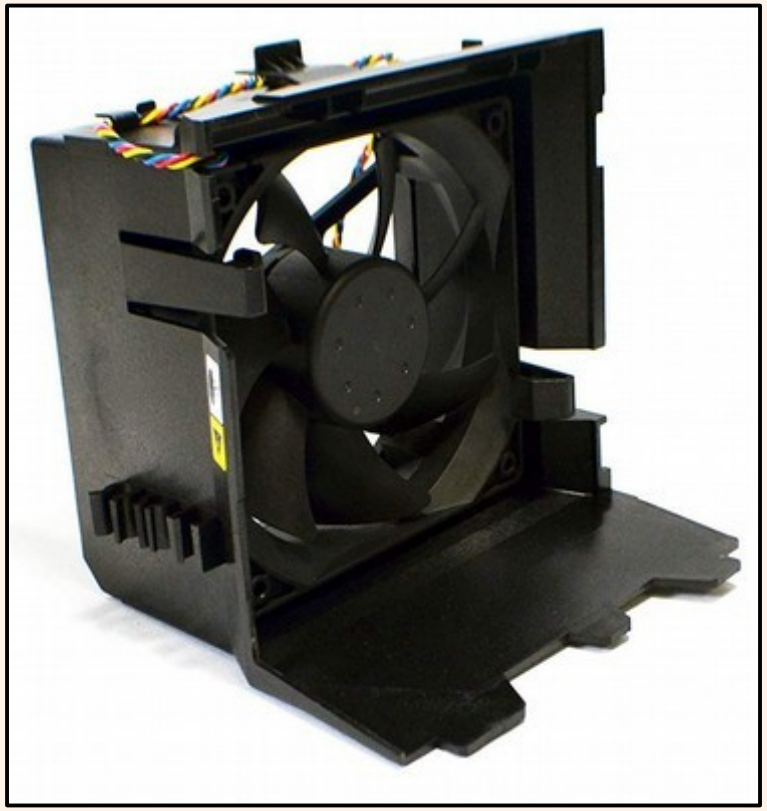

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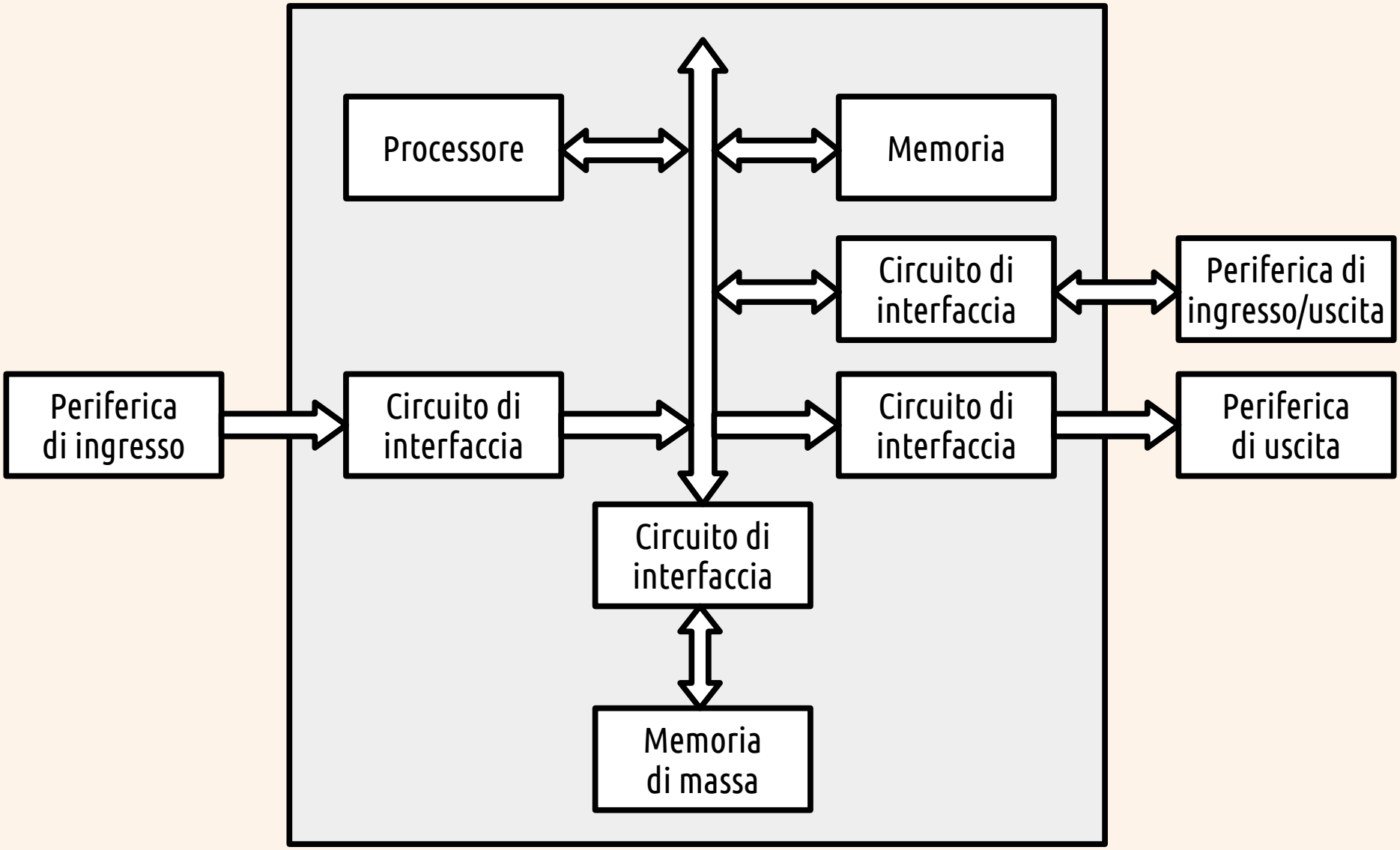

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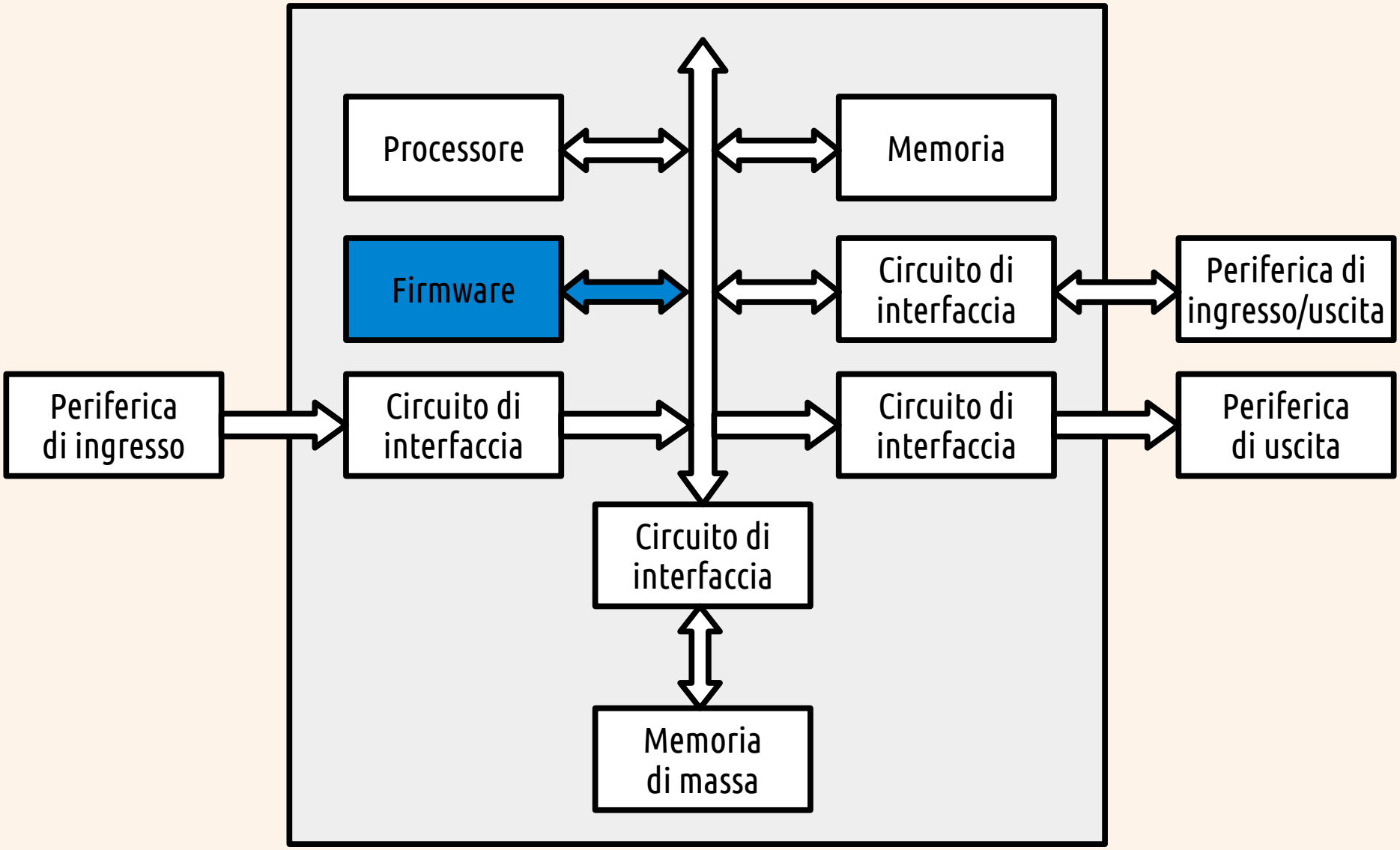

ARCHITETTURA