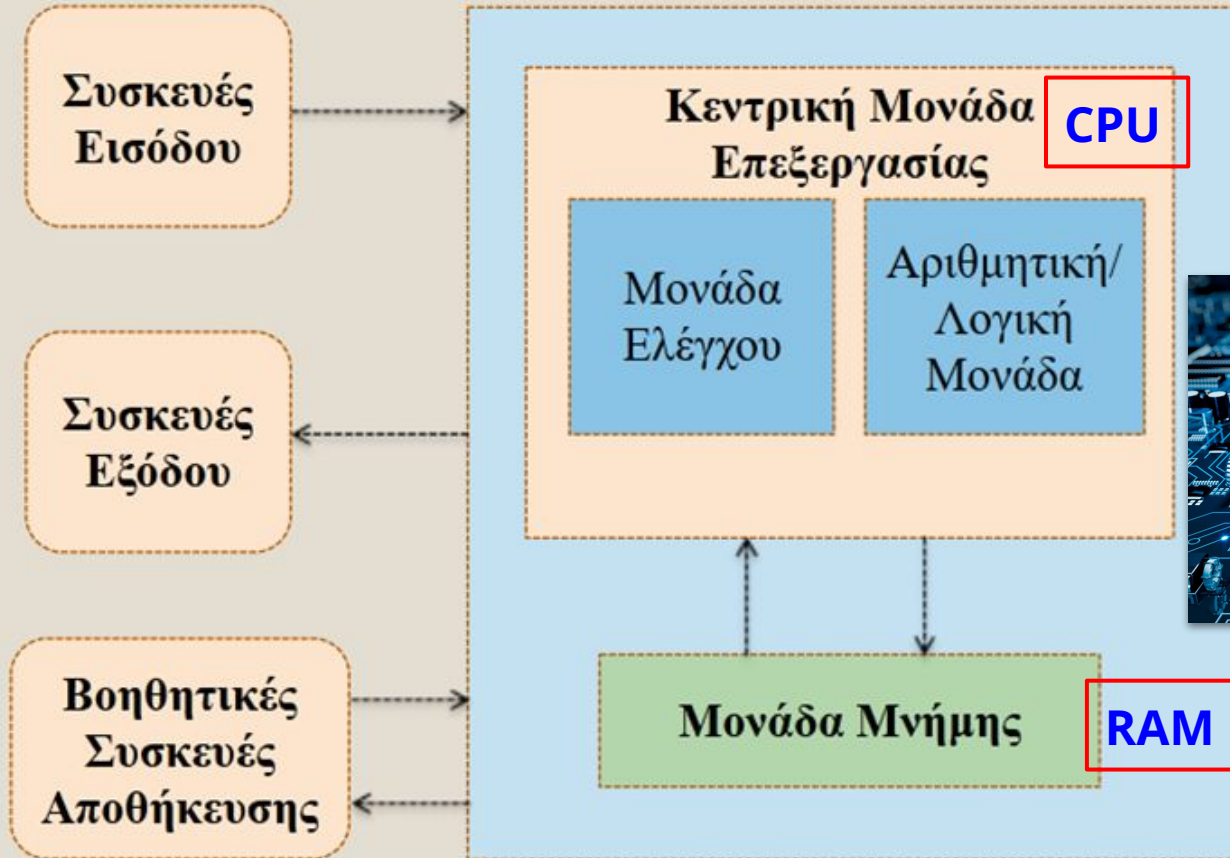
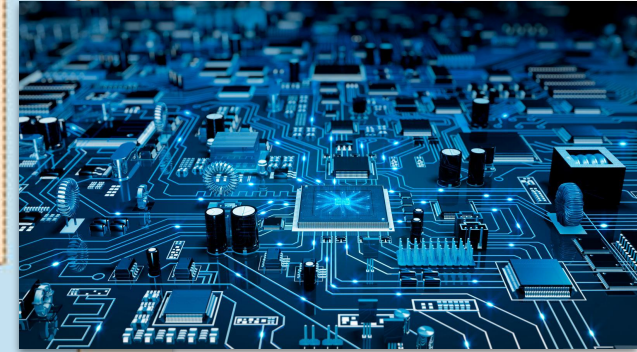
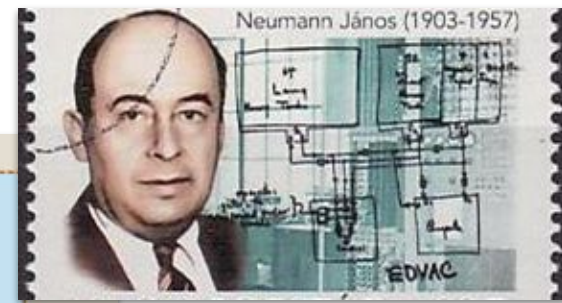


Η αρχιτεκτονική von Neumann





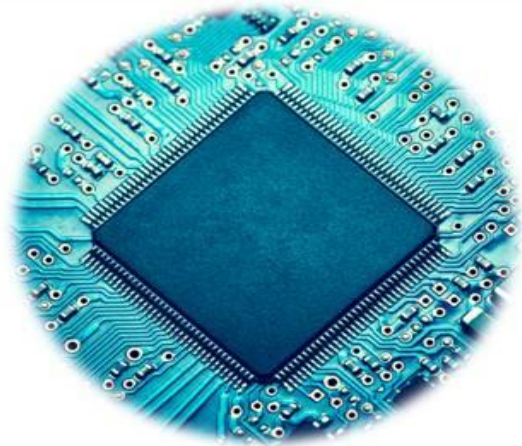
APPLE NEW M1





Πυρίτιο

Si



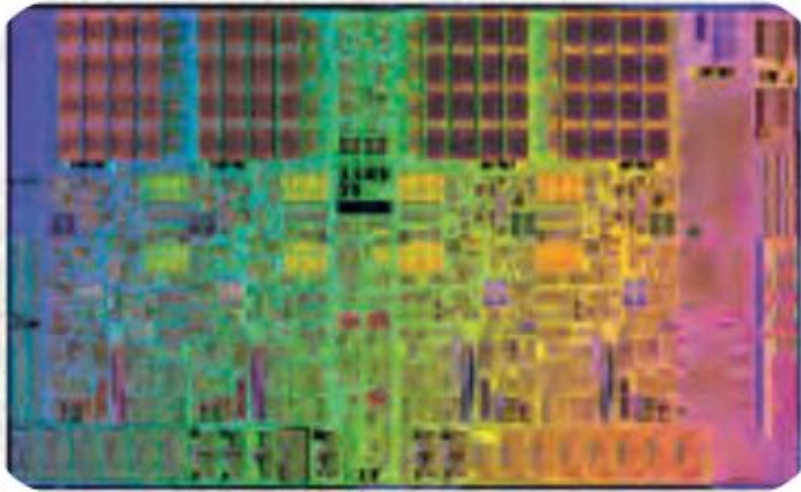
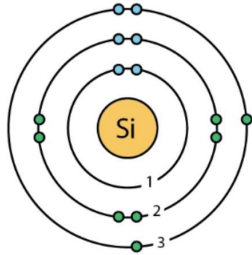
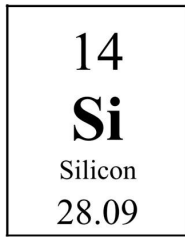


WHY ARE CPUs MADE FROM SILICON?

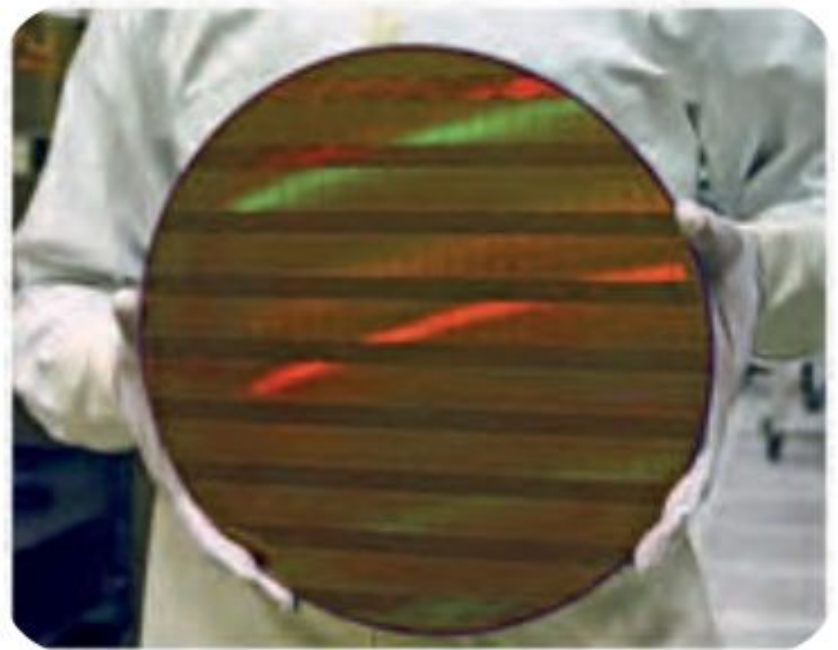
▶ ⏮ 🔊 0:00 / 5:44 • Intro > ⏭ ⚙️ HD 🖥️ 📺 🔍

Why is Silicon Used for Computer Chips?

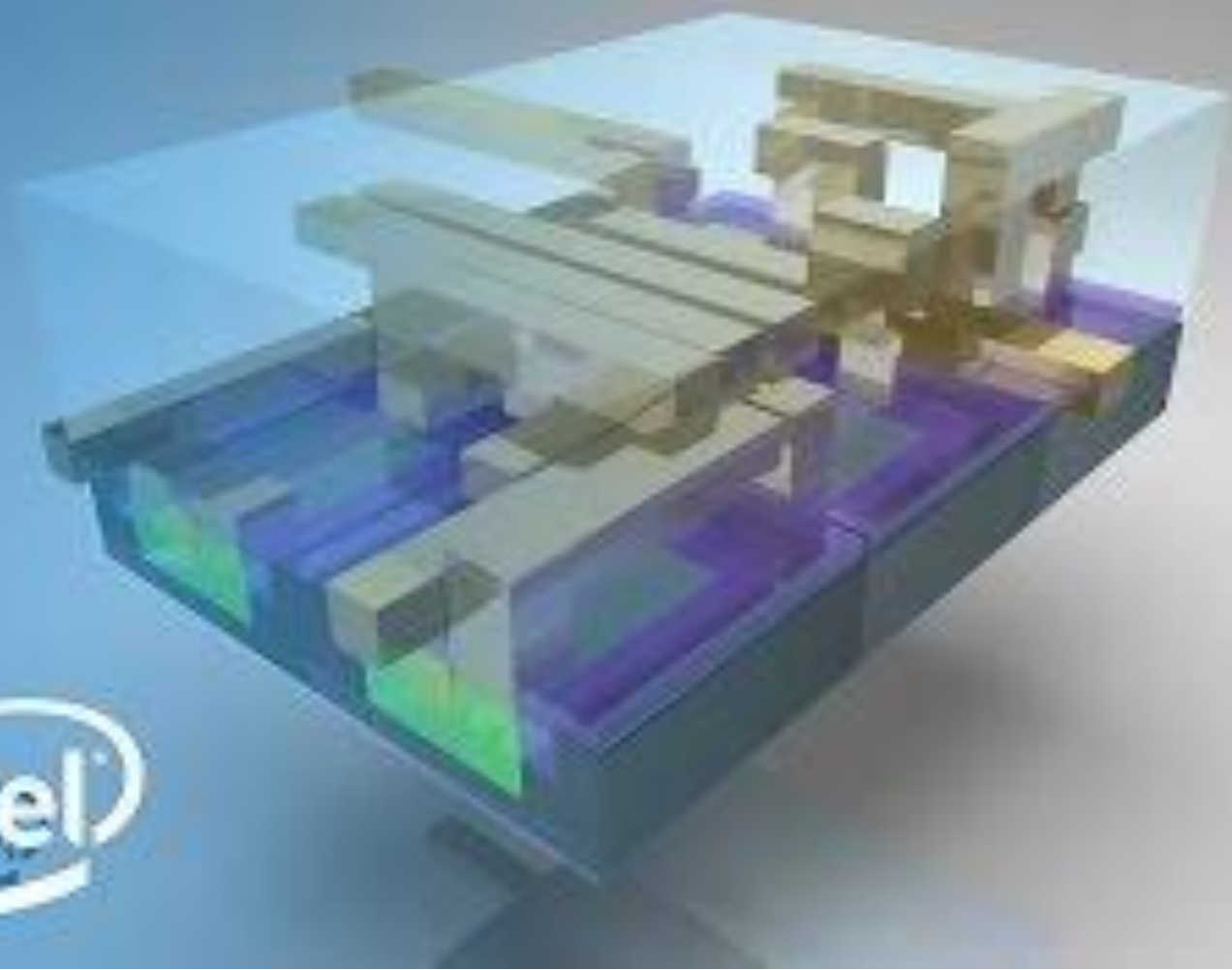
Atomic Structure



Σχήμα 1.7 Το ολοκληρωμένο κύκλωμα μιας ΚΜΕ



Σχήμα 1.8 Φέτα» ημιαγωγών (wafer) από τη διαδικασία παραγωγής ΚΜΕ



ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ ΚΜΕ (CPU)

CPU SPECS?

L3 CACHE 8MB?
14nm LITHOGRAPHY?
4 CORES/8THREADS?
3.4GHZ?





Intel Xeon Platinum 8176
2.1GHz Επεξεργαστής 28
Πυρήνων για Socket 3647 σε...

Max: 3.8GHz, Skylake (6th Gen),
Cache: 38.5MB, Threads: 56



10.777,10 €

Πυρήνες

(**Cores**)

28

Συχνότητα Επεξεργαστή (Base
Frequency)

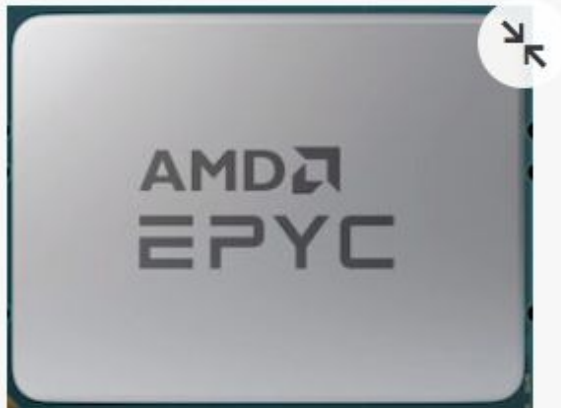
2,1 GHz

Μέγιστη Συχνότητα Επεξεργαστή

3,8 GHz

Μνήμη Cache (**Level 3**)

38,5 MB



AMD Epyc 9634 2.25GHz
Επεξεργαστής 84 Πυρήνων για
Socket SP5 Tray

Max: 3.7GHz, Zen 4, Cache: 384MB,
Threads: 168



από **13.246,50 €**

Πυρήνες

84

Συχνότητα Επεξεργαστή (Base
Frequency)

2,25 GHz

Μέγιστη Συχνότητα Επεξεργαστή

3,7 GHz

Μνήμη Cache

384 MB

ProRes

encode and
decode



Thunderbolt 4



Secure Enclave



Support for two external displays

Up to

32GB

Unified memory

33.7 billion
Transistors



16-core

Neural
Engine

11 trillion operations per second



Up to

10-core
CPU



Up to

16-core
GPU

Industry-leading
performance per watt

5 nm process

200GB/s
Memory bandwidth

1 nanometer

=

1,000,000 millimeters

Benchmarks



Geekbench 6



CPU-Z

System information software

WINDOWS®



ANDROID®

Processor

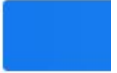
Score



Intel Core i9-13900KS

3.2 GHz (24 cores)

21744



AMD EPYC 9554

3.1 GHz (64 cores)

20172



Intel Core i9-13900KF

3.0 GHz (24 cores)

20099



Intel Core i9-13900K

3.0 GHz (24 cores)

20028



Mac

Score



Mac Studio (2023)

Apple M2 Ultra @ 3.7 GHz (24 CPU cores, 60 GPU cores)

21317



Mac Studio (2023)

Apple M2 Ultra @ 3.7 GHz (24 CPU cores, 76 GPU cores)

21317



Mac Pro (2023)

Apple M2 Ultra @ 3.7 GHz (24 CPU cores, 60 GPU cores)

21180



KYPIA MNHMH (RAM)

DDR



184 pins

DDR2



240 pins

DDR3



240 pins

DDR4



288 pins

Kingston Fury Renegade Pro 256GB DDR5
RAM με 8 Modules (8x32GB) και Ταχύτητα
5600 για Desktop

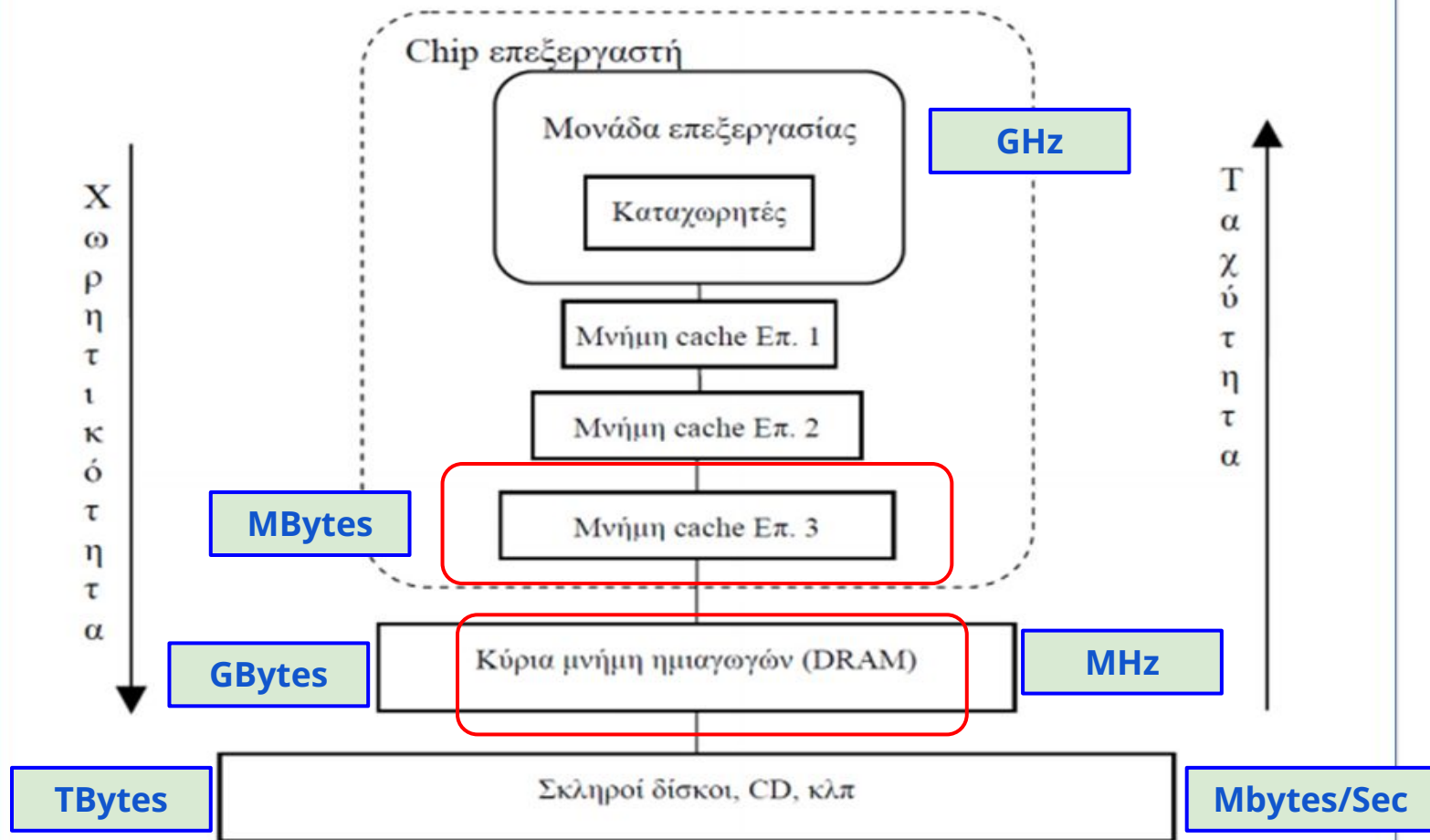
1.331,40 €



Χωρητικότητα: 256 GB

Ταχύτητα: 5600 MHz

Latency: CAS 36



Σχήμα 1.4. Ιεραρχία μνήμης

SSD vs HDD

(Solid State Drive)

(Hard Disk Drive)



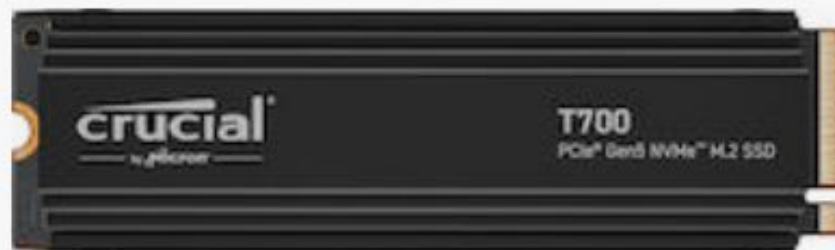
SSD

vs

HDD



faster	✓	✗	slower
more expensive	✗	✓	cheaper
non-mechanical (flash)	✓	✗	mechanical (moving parts)
shock-resistant	✓	✗	fragile
best for storing operating systems, gaming apps, and frequently used files			best for storing extra data, such as movies, photos, and documents



Crucial T700 SSD 2TB M.2
NVMe PCI Express 5.0



από **415,30 €**



Seagate Exos 7E10 2TB HDD
Σκληρός Δίσκος 3.5" SATA III
7200rpm με 256MB Cache για...



από **147,26 €**



Intel® Solid-State Drive

Faster¹ and more reliable² than
a typical hard drive because it
has no moving parts.

