INTEL

MICROPROCESSORS

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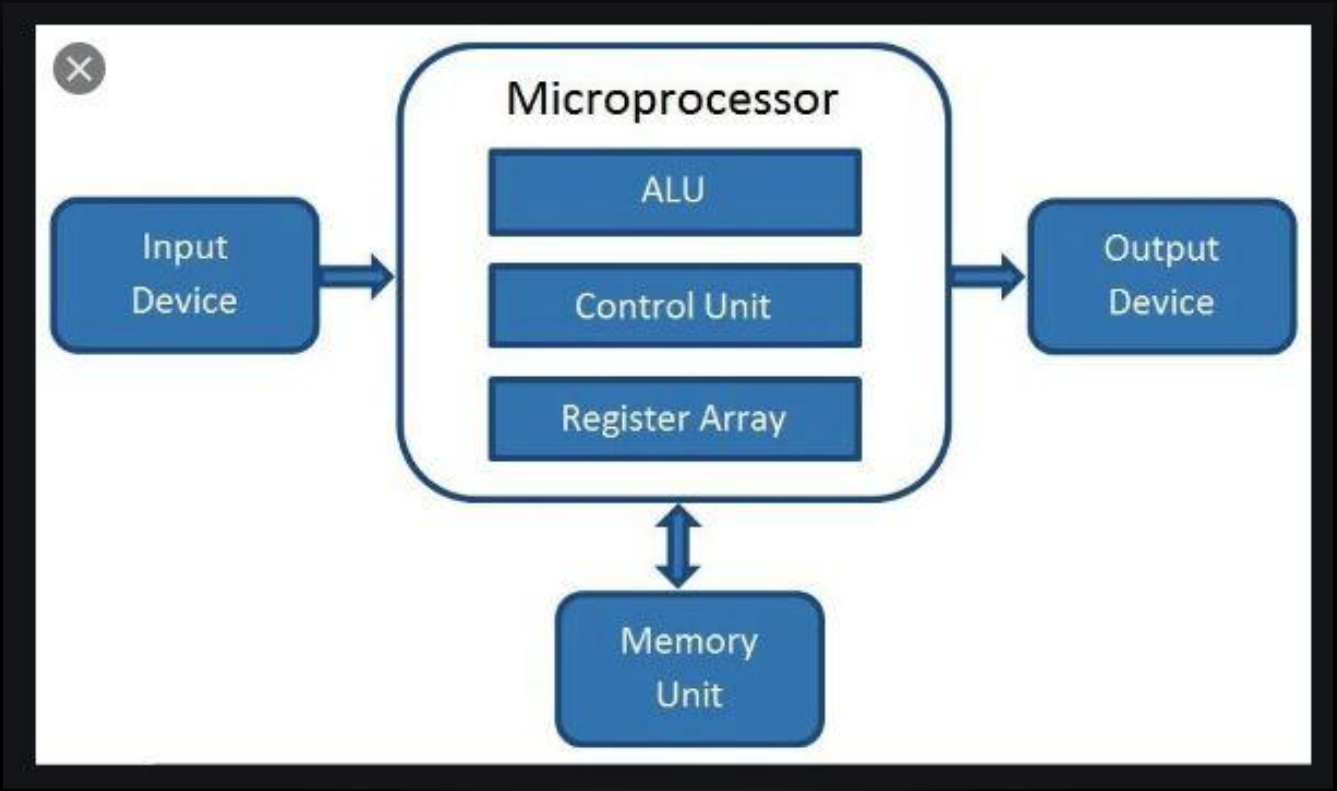
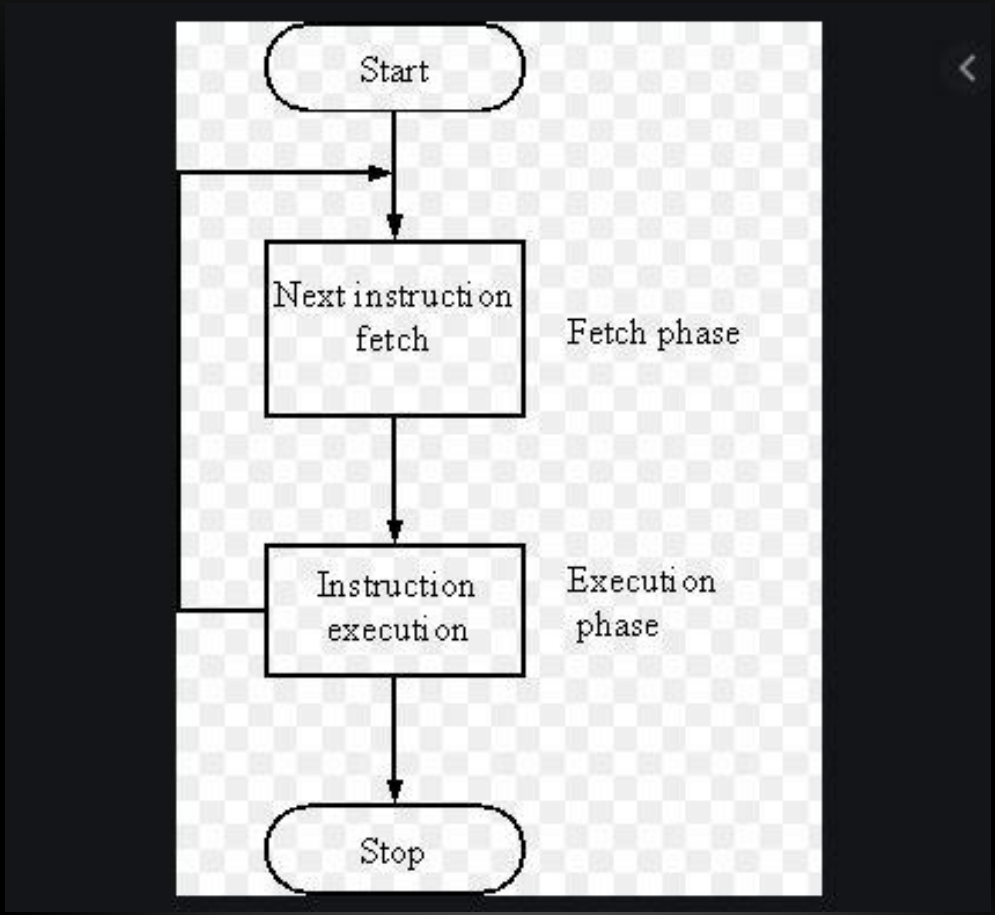
MICROPROCESSOR

"The integrated circuit which contain all the function of the CPU (Central Processing Unit) of a computer is known as Microprocessor."

A COMPUTING SYSTEM



LIFE CYCLE OF PROCESSOR

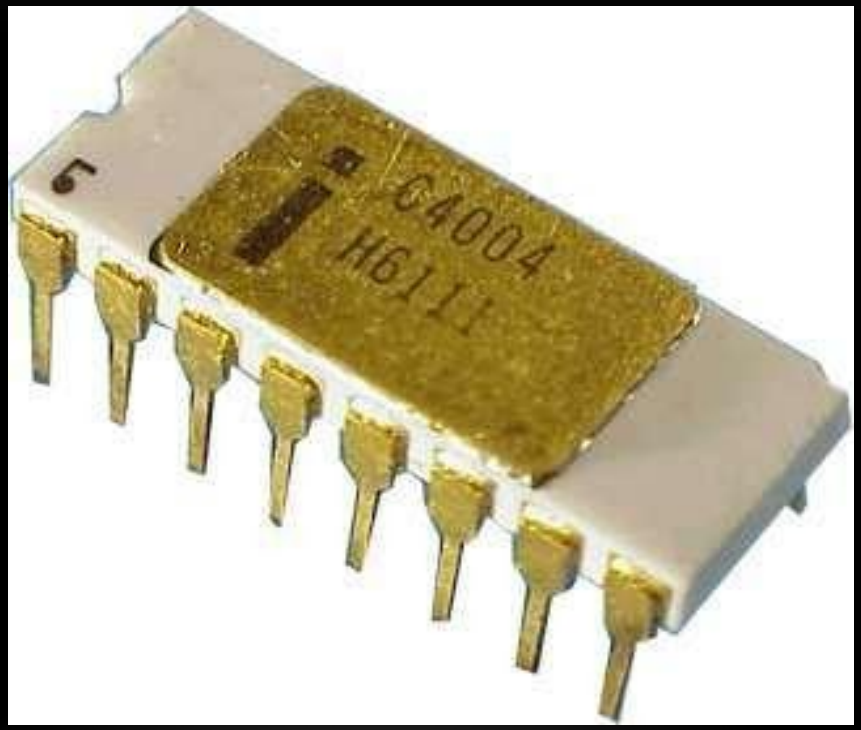


4-BIT MICROPROCESSORS

INTEL 4004

- First microprocessor introduced in 1971 by Busicom Corp and Federico Faggin.
- It was the first microprocessor by Intel.
- It was a 4-bit µP.
- Its clock speed was 740KHz.
- It had 2,300 transistors.

INTEL 4004

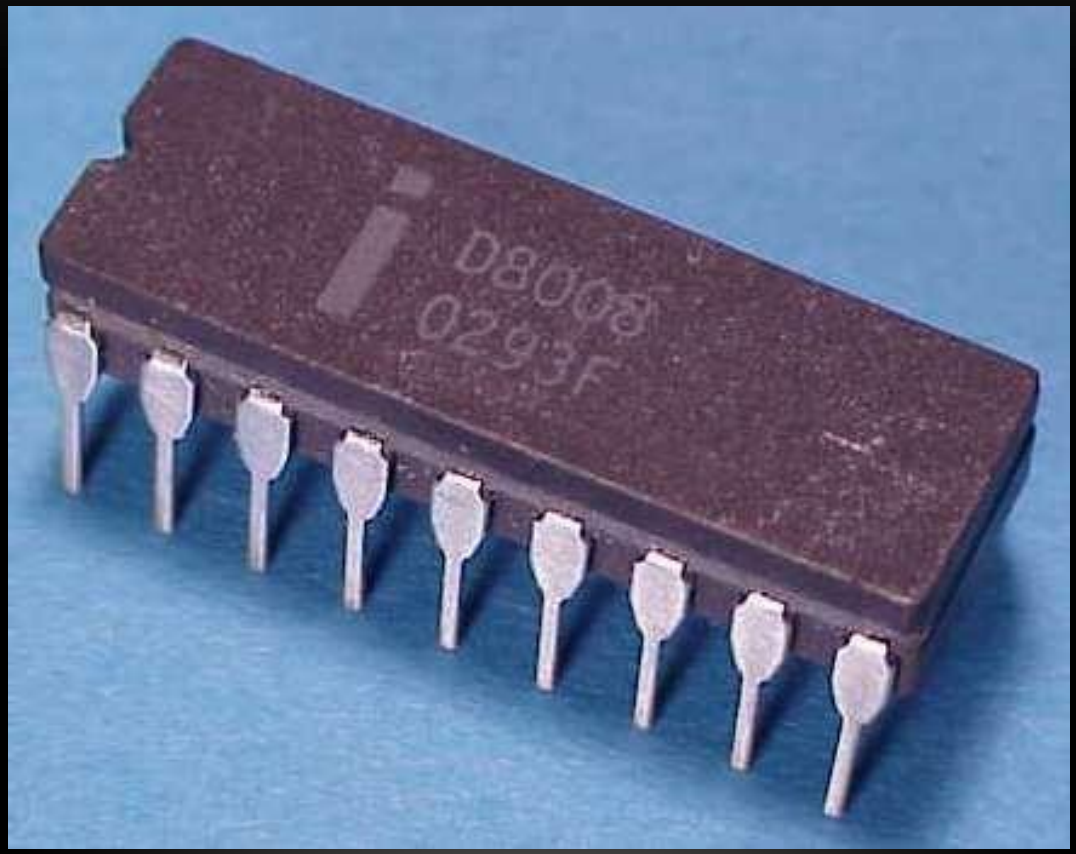


8-BIT MICROPROCESSORS

INTEL 8008

- Introduced in 1972.
- It was first 8-bit µP.
- It had 3,500 transistors.
- Its clock speed was 500KHz.

INTEL 8008



INTEL 8085

- Introduced in 1976.
- It was also 8-bit µP.
- Its clock speed was 3 MHz.
- It had 6,500 transistors.
- It could access 64 KB of memory.
- It had 246 instructions.

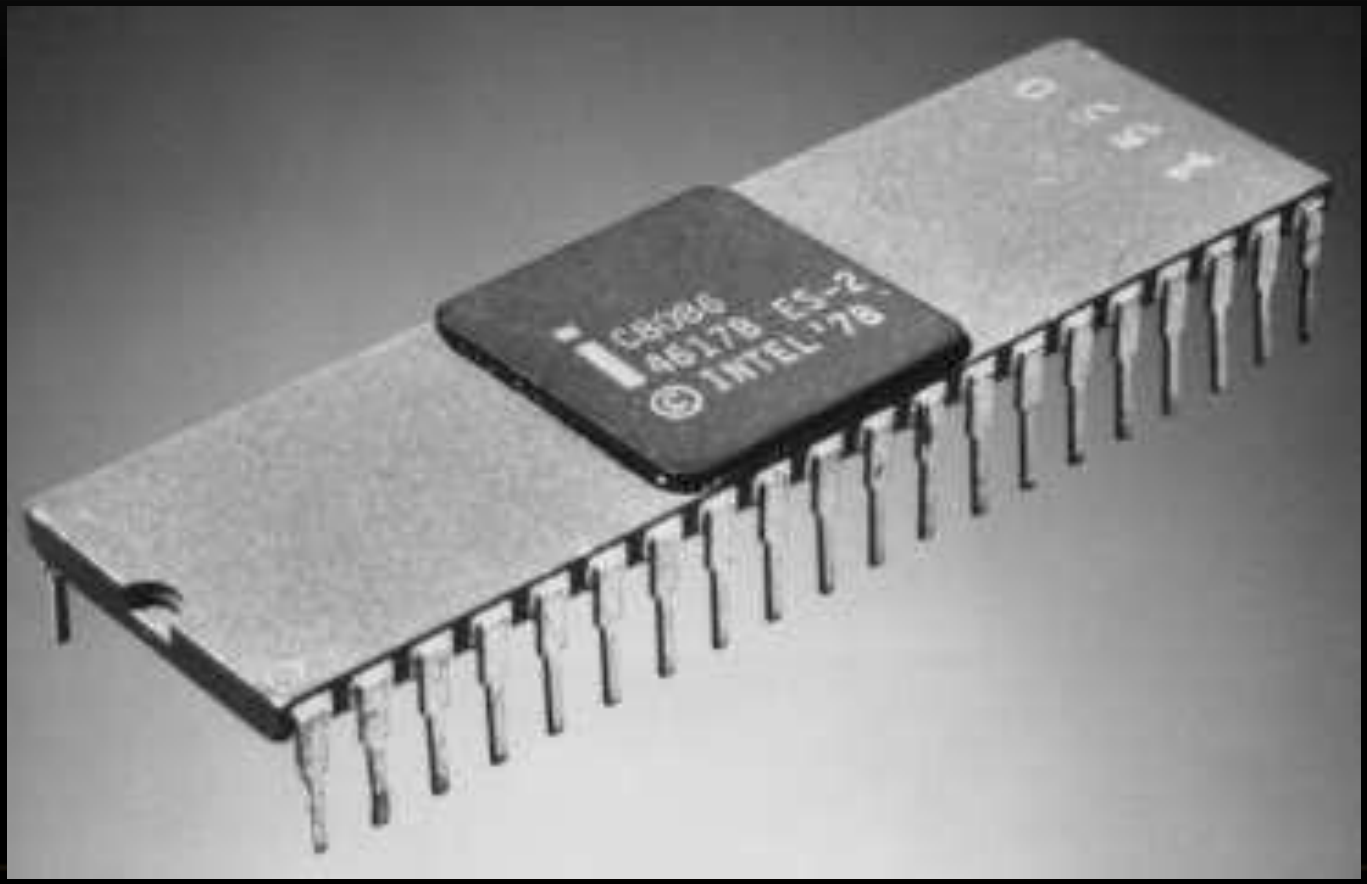
16-BIT MICROPROCESSORS

INTEL 8086

- Introduced in 1978.
- It was first 16-bit µP.
- Data bus 16-bit.
- Its clock speed is 4.77 MHz, 8 MHz and 10 MHz, depending on the version.
- It had 29,000 transistors

- It could access 1 MB of memory.
- Length of data bus 16-bit.
- It had 22,000 instructions.
- It had also Multiply and Divide instructions

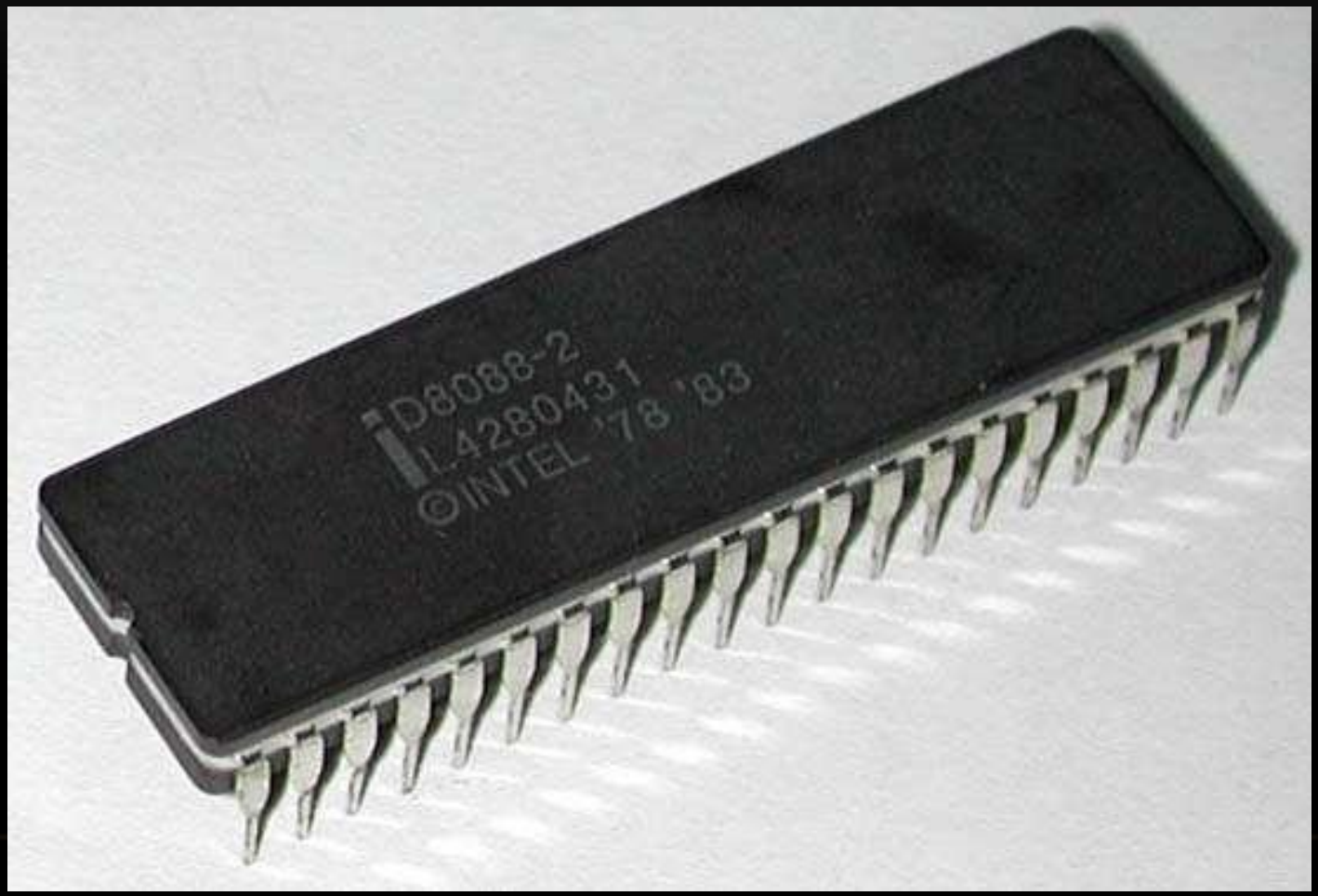
INTEL 8086 (DIP)



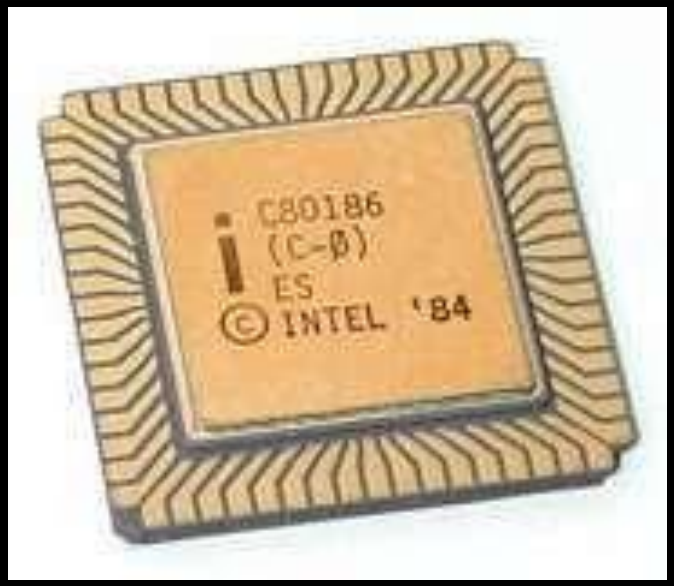
INTEL 8088

- Introduced in 1979.
- It was also 16-bit μP.
- It was created as a cheaper version of Intel's 8086.
- This chip became the most popular in the computer industry when IBM used it for its first PC.

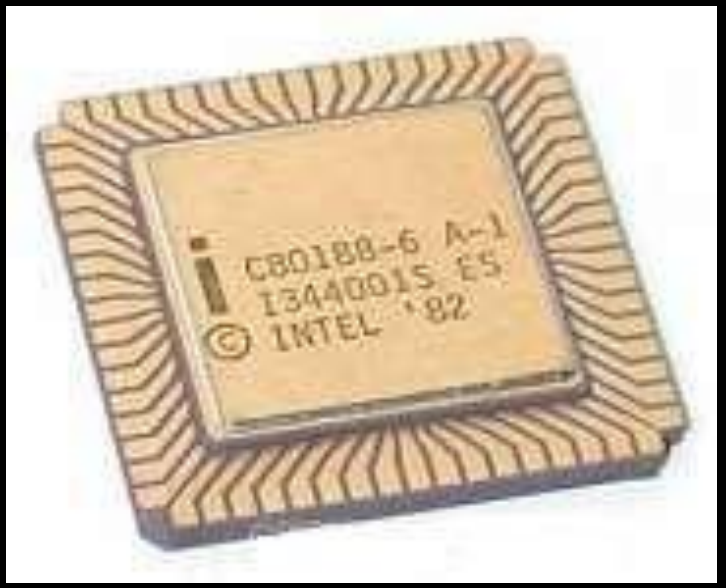
INTEL 8088



INTEL 80186/80188



INTEL 80186

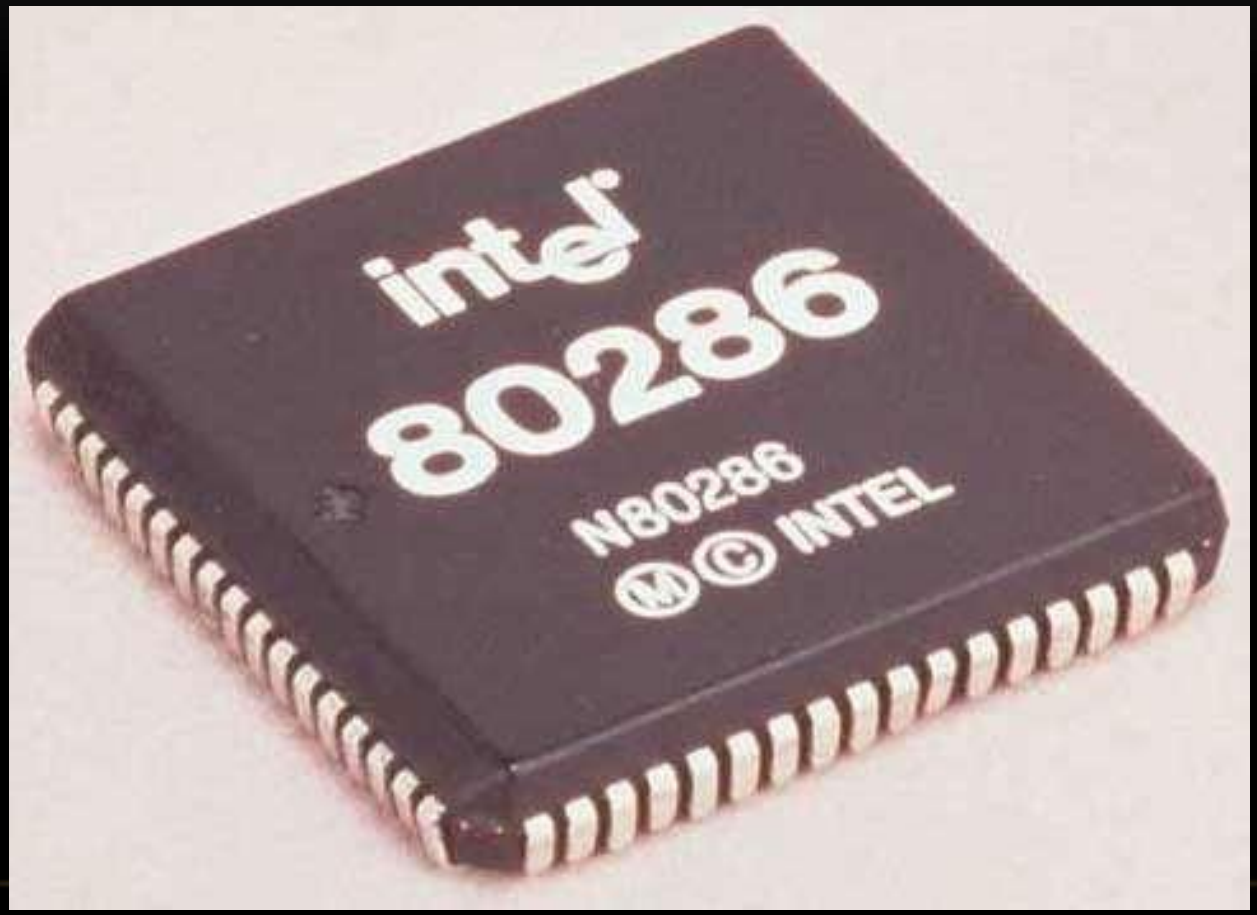


INTEL 80188

INTEL 80286

- Introduced in 1982.
- It was 16-bit μP.
- Data bus 16-bit.
- Its clock speed was 8 MHz.
- It could address 16 MB of memory.
- It had 1,34,000 transistors.

INTEL 80286



32-BIT MICROPROCESSORS

INTEL 80386

Introduced in 1986.

It was first 32-bit µP.

Data bus 32-bit.

It could address 4 GB of memory.

It had 2,75,000 transistors.

INTEL 80386

- Its clock speed varied from 16 MHz to 33 MHz depending upon the various versions.
- Three Different versions:

1. 80386 DX
2. 80386 SX
3. 80386 SL

- Intel 80386 became the best selling microprocessor in history.

INTEL 80386

INTEL 80486

- Introduced in 1989.
- It was also 32-bit µP.
- It had 1.2 million transistors.
- Its clock speed varied from 16 MHz to 100 MHz depending upon the various versions.

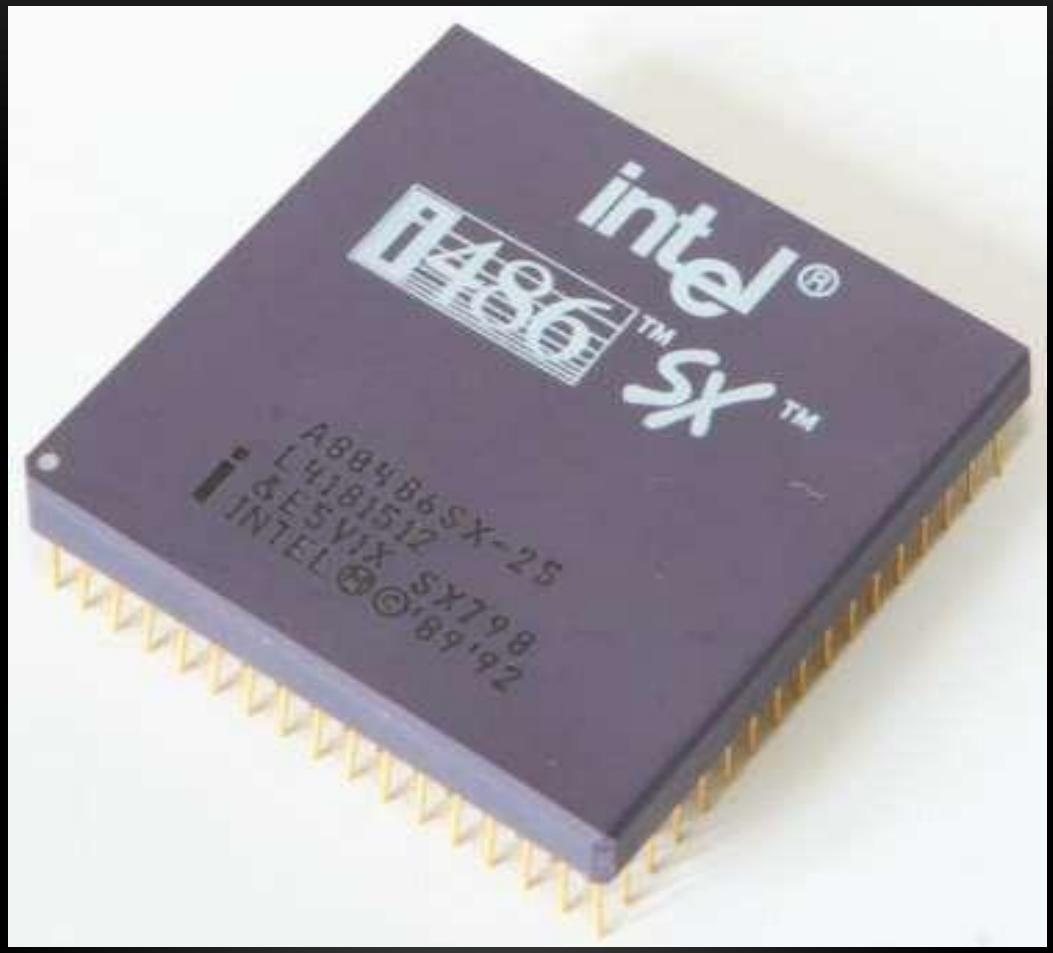
INTEL 80486

- It had five different versions:

1. 80486 DX
2. 80486 SX
3. 80486 DX2
4. 80486 SL
5. 80486 DX4

- 8 KB of cache memory was introduced.

INTEL 80486



PENTIUM/ 80586

- Introduced in 1993.
- It was also 32-bit µP.
- It was originally named 80586.
- Its clock speed was 66 MHz.
- It could address 4 GB of memory.
- Could execute 110 million instructions.

PENTIUM

- Cache memory:
  - 8 KB for instructions.
  - 8 KB for data.

PENTIUM PRO

- Introduced in 1995.
- It was also 32-bit µP.
- It had 21 million transistors.
- It was primarily used in server systems.
- Cache memory:
  - 8 KB for instructions.
  - 8 KB for data.
- It had L2 cache of 256 KB.

PENTIUM PRO


GJ80521EX200 Q004 1M
intel®
PENTIUM®PRO
I718201Q-0340
INTEL © '94 '96

INTEL PENTIUM 1

- Introduced in 1997.
- It was also 32-bit μP.
- Its clock speed was 233MHz to 500 MHz.
- Could execute 333 million instructions per second.
- L2 cache & processor were on one circuit.

PENTIUM II

64-BIT MICROPROCESSORS

INTEL CORE 2

- Introduced in 2006.
- It is a 64-bit µP.
- Its clock speed is from 1.2 GHz to 3 GHz.
- It has 291 million transistors.
- It has 64 KB of L1 cache per core and 4 MB of L2 cache.
- It is launched in three different versions:
  - Intel Core 2 Duo
  - Intel Core 2 Quad
  - Intel Core 2 Extreme

CORE 2 DUO

CORE I7

- Introduced in 2008.
- It is a 64-bit μP.
- It has 4 physical cores.
- Its clock speed is from 2.66 GHz to 3.33 GHz.
- It has 781 million transistors.
- It has 64 KB of L1 cache per core, 256 KB of L2 cache and 8 MB of L3 cache.

CORE I7

CORE I5

- Introduced in 2009.
- It is a 64-bit µP.
- It has 4 physical cores.
- Its clock speed is from 2.40 GHz to 3.60 GHz.
- It has 781 million transistors.
- It has 64 KB of L1 cache per core, 256 KB of L2 cache and 8 MB of L3 cache.

INTEL CORE I5

CORE I5

- Introduced in 2010.
- It is a 64-bit µP.
- It has 2 physical cores.
- Its clock speed is from 2.93 GHz to 3.33 GHz.
- It has 781 million transistors.
- It has 64 KB of L1 cache per core, 512 KB of L2 cache and 4 MB of L3 cache.

CORE I5