

The Architecture of 8086 Microprocessor

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- Microprocessors made by Intel Corporation form **the foundation of all PCs**. Models after the 8086 are often referred to by the last three digits (for example, the 286, 386, and 486). Many of the microprocessors come in different varieties that run at various clock rates.

Intel Microprocessor :

- **Features of 8086** : It has an **instruction queue, which is capable of storing six instruction bytes from the memory resulting in faster processing.** It was the first 16-bit processor having 16-bit ALU, 16-bit registers, internal data bus, and 16-bit external data bus resulting in faster processing.

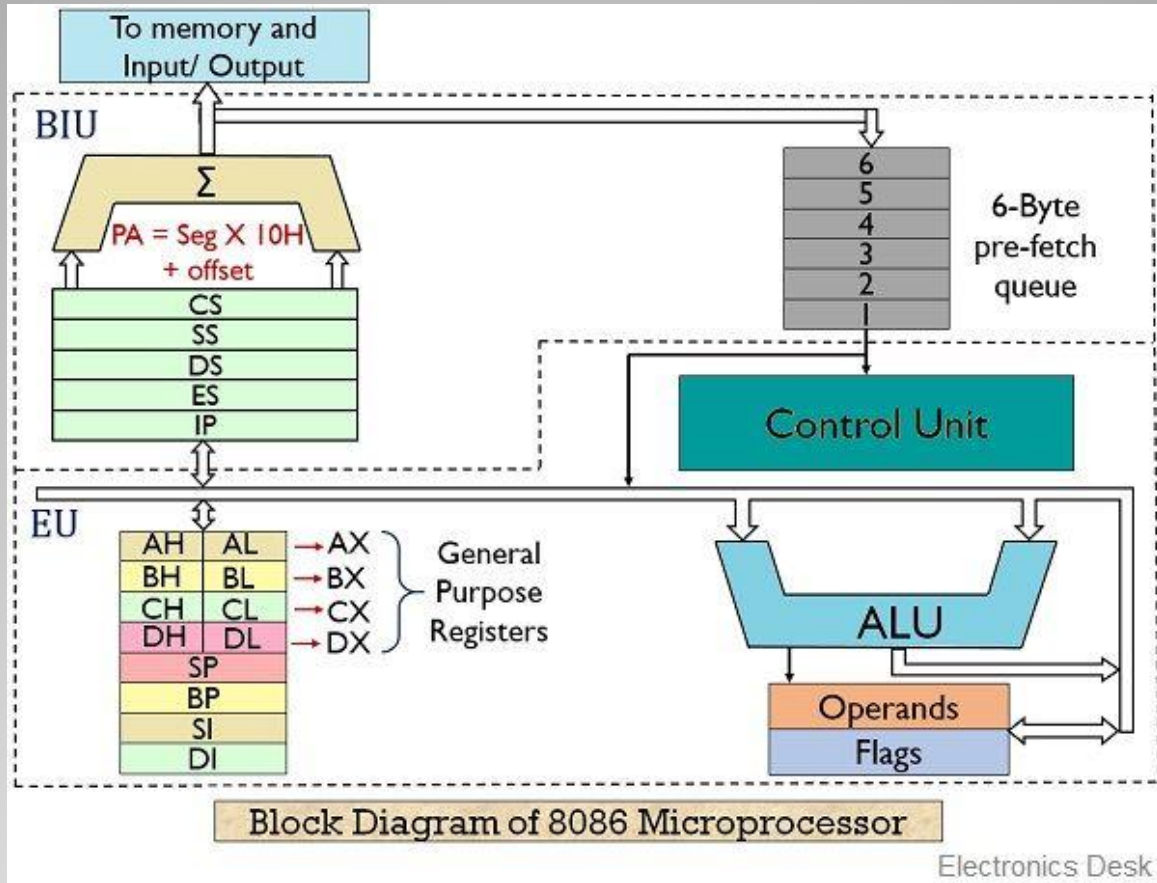
General Features of Intel 8086/8088 microprocessor

- The Intel 8088 has a **clock speed from 5-10 MHz**, with 16-bit registers, a 20-bit address bus, a 16-bit external data bus, and supports 1 mb of memory. The Intel 8088 also supports the Intel 8087 numeric co-processor that enables it to recognize and process floating point data and instructions.

Features of 8088

- The 8086 gave rise to **the x86 architecture**, which eventually became Intel's most successful line of processors. On June 5, 2018, Intel released a limited-edition CPU celebrating the 40th anniversary of the Intel 8086, called the Intel Core i7-8086K

**Intel 8086 microprocessor
architecture**



Block Diagram of 8086 Microprocessor

➤ Difference between 8086 and 8088

Sr. No.	8086 Microprocessor	8088 Microprocessor
1	Developed by Intel in 1978	Developed by Intel in 1979
2	It has 16-bit data bus	It has 8-bit data bus
3	Three versions depending on clock speed – 5, 8 and 10 MHz.	Two versions depending on clock speed – 5 and 8 MHz.
4	The 8086 draws a maximum supply current of 360 mA.	The 8088 draws a maximum supply current of 340 mA.
5	It has a 6-byte instruction queue in BIU	It has a 4-byte instruction queue in BIU
6	It has 16-bit data bus, and 16-bit memory Read or Write operation can be done in one cycle.	It has 8-bit data bus, so 16-bit memory Read or Write requires two cycles.
7	The memory for 8086 is set up as two banks – Even	The memory for 8086 is set up as one bank only.

Difference between 8086 and 8088 microprocessor