

# Unit 1

## **Introduction to Microprocessors 16/32/64 Bit**

### **Evolution & Comparison**

# Evolution and Comparison of Intel Microprocessors

Processor	Year	Bit	Clk Speed/ MIPS	Data Bus	Address Bus/ Memory
4004		4	50 KIPS	4	4KB
8008	1971	8		8	16 KB
8080	1973	8	0.5MIPS/ 3 MHz	8	16 64 KB
8085 100 Million Sold	1977	8	0.5MIPS/ 3 MHz	8	16 64 KB
8086 Instruction Queue (Pipelining) 20000 Variations in Inst.	1978	16	2.5 MIPS	16	20 1 MB

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Processor	Year	Bit	Clk Speed/ MIPS	Data Bus	Address Bus/ Memory
8088	1979	16	2.5 MIPS	8	1 MB
80286	1981	16	4 MIPS	16	16 MB
80386 MMU	1986	32	33 MHz	32	32 / 4 GB
80386 SX		32		16	24/ 16 MB
80386 SL/SLC 80386 EX DRAM Controller GUI, VGA 640 x 480		32		16	25/32 MB

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Processor	Year	Bit	Clk Speed/ MIPS	Data Bus	Address Bus/ Memory
80486	1989	32	50 MHz/50 MIPS	32	8 KB Cache
80486 DX2 Double Clocked					
80486 DX4 Triple Clocked					16 KB C
<b>Pentium</b> Superscalar Technology , Branch Prediction	<b>1993</b>	<b>32</b>	<b>60/66 MHz</b> <b>110 MIPS</b> <b>100 MHz/</b> <b>150 MIPS</b>	<b>64</b>	<b>64 GB</b> <b>16 KB C</b>

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Processor	Year	Bit	Clk Speed/ MIPS	Data Bus	Address Bus/ Memory
Pentium MMX	1996	32	200 MHz/266 MHz	64	
Pentium II		32	200/ 266MHz	64	64 GB 16 K L1 + 512 K L2 C
Pentium III	1997	32	433/ 750 MHz	64	64 GB 32 K L1 + 512 K L2 C

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Processor	Year	Bit	Clk Speed/ MIPS	Data Bus	Address Bus/ Memory
Pentium IV Aluminum to Copper conductors	2000	32	1.3 GHz/ 1.5 /1.8 /2.4/3.0 GHz	64	64 GB 32 K L1 + 512 K L2 C

H.W Overdrive Processors

Reference : The Intel Microprocessors by Barry B.Brey PHI (P 5-15 )

# Drawbacks of 8 Bit Microprocessors

- Low speed of Execution.
- Low Memory addressing Capability.
- Limited no. of registers.
- 8 bit ( number size)
- Less powerful instruction set.
- Multiprogramming and multiprocessing.

*THANK YOU*