



# COMPUTER SYSTEMS & PROGRAMMING

---

## Microprocessor

Zuhaib A. Shaikh,  
Asst. Prof., CSE Deptt.,QUEST  
Web: [zuhaib-shaikh.neocities.org](http://zuhaib-shaikh.neocities.org)



# Microprocessor

- Also known as CPU (Central Processing Unit)
- Responsible for processing/manipulating data
- Intel 4004 was 1<sup>st</sup>  $\mu$ P introduced in 1971
- Logical parts
  - ALU
  - CU
  - MU
- Two different architectures
  - X86 (based on x86 microprocessor family) – 32 bit
  - X64 – 64 bit
- Factors
  - Number of transistors (tends towards moor's law)
  - Clock speed
  - Micron
  - MIPS
  - Data width
  - Date
  - Size of cache memory



# Microprocessor

- Sockets
  - LGA (e.g. LGA 755, LGA 1150)
  - PGA (e.g. socket 7)
- Instruction Set Architecture
  - Microprocessor works on predefined set of instructions called ISA
  - All program instructions are mapped into ISA for execution
- Latest trends
  - Multi-core systems
  - Hyper-threading
  - Super-scalar computing
  - Turbo Boost technology
  - Enhanced Intel Step technology
  - Virtualization Technology
  - RISC & CISC
  - Multimedia Technology e.g. MMX
- Variations
  - Microprocessor (Dual core, AMD Athlon etc.)
  - Microcontroller (Atmel 2560, Intel 8051)
  - Embedded Systems (e.g. Cortex A5, ARM processor)



# Questions

